A comparison of the educational potential of professional cloud-based and free, standalone desktop-based subtitling tools

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Contents

Summary

With the advancement of audiovisual translation technology, the technology used in the education of audiovisual translators is also changing. There are two main types of subtitling systems on the market, standalone desktop-based systems, some of which are free (e.g., Subtitle Workshop, Subtitle Edit, Aegisub), and professional, cloud-based systems (e.g., OOONA). The use of cloud-based technology for educational purposes is on the rise, with non-professional desktop-based systems still being used more often, as they are mostly free of charge and offer similar features. This thesis investigates the educational potential of these systems, to show whether there is a significant difference in their role in the learning of subtitling at university level. It tests the hypothesis that professional cloud-based subtitling systems are more useful in education than free desktop-based systems. A questionnaire was conducted among two groups of students who used one or the other of the above-mentioned systems. The perceived level of acquisition of skills required in subtitling and satisfaction with certain functions of the software were primarily examined. The findings may prove useful for courses in which subtitling is taught and for improving the systems on which this thesis will be based.

Key words: subtitling, desktop-based software, cloud-based software, audiovisual translation, technology

Sažetak

Napretkom tehnologije audiovizualnog prevođenja mijenja se i tehnologija u edukaciji audiovizualnih prevoditelja. Na tržištu postoje dvije osnovne vrste sustava za podslovljavanje: samostalni sustavi za osobna računala, od kojih su neki besplatni (npr. Subtitle Workshop, Subtitle Edit, Aegisub) i profesionalni sustavi u oblaku (npr. OOONA). Tehnologija u oblaku nedavno se počela koristiti u edukacijske svrhe, pri čemu se neprofesionalni samostalni sustavi češće koriste budući da su uglavnom besplatni, a nude slične funkcije. U radu se istražuje obrazovni potencijal navedenih sustava kako bi se pokazalo postoji li značajna razlika u njihovoj funkciji u edukaciji podslovljavanja na sveučilišnoj razini. Polazi se od pretpostavke da su sustavi za podslovljavanje u oblaku korisniji u edukaciji od samostalnih programskih sustava. Proveden je upitnik na dvjema skupinama studenata koje su koristile jedan od navedenih sustava. Primarno se ispitivala percipirana razina usvajanja vještina potrebnih u podslovljavanju te zadovoljstvo pojedinim funkcijama programa. Rezultati se mogu pokazati korisnima za kolegije u kojima se podučava podslovljavanje te za unaprjeđenje samih sustava na kojima će se temeljiti ovaj rad.

Ključne riječi: podslovljavanje, softver za osobna računala, softver u oblaku, audiovizualno prevođenje, tehnologija

1. Introduction

With the rise and technological development of audiovisual translation (AVT) as a field and subtitling as its sub-discipline, the didactics of AVT, as well as subtitling, have transformed over the years. Two main types of subtitling software solutions used in education exist on the market today, according to their installation, activation or usage – desktop-based and cloud-based software. Each of them carries their own benefits and setbacks, and provides a slightly different didactic tool, ultimately with the same goal. Desktop-based software solutions are often free and used in amateur subtitling. Due to their affordability and availability, educational institutions also tend to use them in their subtitling courses to provide students with basic subtitling skills. Cloud-based software is relatively new on the audiovisual translation scene, and is most commonly proprietary or paid and used in professional subtitling practice. By carrying out a questionnaire among two groups of students who used different kinds of software in their subtitling education, this MA thesis attempts to compare the educational potential of free desktop-based subtitling software and paid cloud-based subtitling software. The main research question is whether there is a significant difference between their function and role in the education of subtitling at university level. The answer to this question would not only give valuable feedback to some of the developers in question, but also carry practical value for the educators and universities that use their products, since desktop-based tools are most often free-of-charge, while most cloud-based tools require the purchase of a license for their activation and use. Therefore, the results of the questionnaire and further research could potentially influence the financial aspects of curriculum implementation. The starting-point of this study is the hypothesis that professional cloud-based systems, here exemplified by OOONA, are more useful in subtitling education at university level in terms of the current translation market than free desktop-based systems, with a higher educational potential. A sub-hypothesis is that the OOONA tools the students were provided with as part of the software package were sufficient for their needs at this level of education. The study aims to assess and compare the educational potential of professional cloud-based and free desktop-based subtitling software, determine whether they offer significantly different didactic possibilities, and, based on the questionnaire results, provide companies and websites with valuable feedback to improve their software, the quality of subtitling education, as well as students' future experience and preparedness for the translation market.

2. Terminology and theoretical background

This, largely introductory, section provides the main definitions and explanations of the concepts that form the basis of this study. Further reading and the relevant bibliography are referenced throughout the text and at the end of the document.

2.1. AVT and subtitling

The subject of the current research paper lies in the wider field of audiovisual translation. Audiovisual translation is an academic (sub)discipline and profession that involves the localisation of audiovisual media through different translation and language transfer practices (Bolaños-García-Escribano, 2020, p. 32). It involves four types of signs it employs in the transfer of meaning, namely audio-verbal, audio-nonverbal, visual-verbal and visual-nonverbal signs (Bolaños-García-Escribano, 2020, p. 32). AVT can also be defined as a type of translation involving the interlingual or intralingual transfer of audiovisual content (Chaume, 2013, p. 105). AVT has been the subject of academic research since the last quarter of the 20th century, while the first courses on audiovisual translation began in Europe in the late 1980s and early 1990s (Bolaños-García-Escribano, 2020, p. 32), with the methods of education continuously improved to prepare future audiovisual and other translators for the market. Audiovisual translation is a fast-growing discipline that includes many language transfer practices. The key feature that binds all those practices together is the multisemioticity of the source and target material, as well as the spatial and temporal constraints imposed on the interlingual or intralingual transfer (Bolaños-García-Escribano, 2020, p. 42). The two main AVT practices are revoicing and subtitling (Chaume, 2013, p. 106).

Revoicing involves complete or partial replacement of the original audio track, with the two most common practices being voiceover and dubbing (Bolaños-García-Escribano, 2020, p. 44). The practice of subtitling, on the other hand, involves conveying a target language version of the original dialogue, audio and text through sequences of written text positioned over the original visual footage (Bolaños-García-Escribano, 2020, p. 54). Subtitling has sometimes been referred to as "constrained translation" due to the spatial, temporal and linguistic considerations and limitations imposed on the subtitling environment (Díaz-Cintas, 2013, p. 274). The format of the subtitles, as well as their position, can largely affect their reception by the audience. Subtitles are most commonly placed at the bottom of the screen, even though they can be positioned differently; they usually consist of two lines and are centred and displayed horizontally (Díaz-Cintas, 2013, p. 274; Bolaños-García-Escribano, 2020, p. 71). Making sure

the text on screen appears in synchrony with the original utterances, as well as the visual material, is another crucial consideration affecting the viewer's experience. This process of setting the in- and out-times of subtitles so that they are synchronised with the spoken dialogue is known as spotting, cueing, originating or timing (Díaz-Cintas, 2013, p. 275; Bolaños-García-Escribano, 2020, p. 75). Spotting is facilitated by the use of a timecode, a unique reference eight-digit number for each frame – the smallest unit of measurement for videos – that defines its precise timing (Bolaños-García-Escribano, 2020, p. 75). Using the timecode, the in- and out-cues for each subtitle can easily be determined, keeping in mind the duration of the subtitle. One of the standards in the process of spotting suggests not prolonging a subtitle over a shot change or a cut in the visual footage (Díaz-Cintas and Remael, 2014, p. 91). The subtitle should end before the shot change and the following subtitle should begin after it. This recommendation is based on eye movement research, according to which the viewer tends to re-read the subtitle after a shot change takes place (Díaz-Cintas and Remael, 2014, p. 91). Although maintaining a subtitle over a shot change might slightly affect the viewer's experience, in cases where the dialogue continues over the shot change, creating a sound bridge, this cannot be easily avoided. Many subtitling software solutions on the market today can automatically detect shot changes in video files, which largely facilitates the process of spotting (Díaz-Cintas and Remael, 2014, p. 92). The amount of time a subtitle remains on the screen must be adapted so that it does not linger on the screen too long, allowing the viewer to start re-reading the subtitle from the beginning, but also that it does not limit the viewer's ability to read the entire subtitle before it disappears. This is influenced by the factor of the reading speed, measured in words per minute (wpm) or characters per second (cps). Reading speed refers to the "relationship that exists between the quantity of text contained in a subtitle and the time it remains on screen" (Bolaños-García-Escribano, 2020, p. 76). For the viewers to be able to comfortably read the subtitles at the appropriate reading speed, the agreed maximum number of characters per line should also be observed. Six seconds is the recommended maximum duration of a subtitle, while one second is commonly agreed to be the ideal minimum duration (Díaz-Cintas, 2013, p. 276). Lastly, subtitles, as a form of translation, must convey a semantically accurate account of the original dialogue in the source language, keeping in mind the syntax, grammar, cohesion, coherence, idiomaticity and natural flow of the target language. Due to the spatial and temporal limitations imposed upon this form of translation, partial reduction or condensation and complete reduction or deletion are the main strategies employed by subtitlers (Díaz-Cintas, 2013, p. 277). The subtitles have to be segmented and the line breaks placed logically and thoughtfully so that, ultimately and ideally, they form a semantically and

syntactically coherent and self-contained unit with a clear structure (Díaz-Cintas, 2013, p. 277). This cannot always be completely achieved, and it falls upon the translator to make the choices best suited to a particular context.

Depending on whether the subtitles are created within the same language as the original dialogue or translated into another language, subtitles can be intralingual or interlingual, respectively (Díaz-Cintas, 2013, p. 279). Where two or more languages are spoken, the subtitles can also be bilingual (Díaz-Cintas, 2013, p. 279). The current study focuses on the narrower practice of interlingual subtitling, "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 written on screen (letters, banners, inserts) or transmitted aurally in the soundtrack (song lyrics, voices off)" (Díaz-Cintas, 2013, p. 274).

2.2. AVT technology and desktop-based subtitling software

AVT is one of the most technology-based translation specialities, which implies it is thoroughly affected by continuous technological advancements. Along with CAT tools, which include project management (PM), translation memory (TM) and machine translation (MT) functionalities, and more general automation that has made translators' work environments more flexible, dynamic and web-based, specialist software is continuously being developed specifically for the field of AVT. Since subtitling is closely bound with globalisation and has undergone a fascinating growth and explosion in the digital era, while also being a practice that requires up-to-date technological solutions, various kinds of subtitling tools are currently being developed. Such software, which is inseparable from the practice of subtitling, is either paid, proprietary, or free/open-source. The software is also divided into desktop-based and cloud-based solutions.

Paid subtitling systems, first developed in the 1970s (Bolaños-García-Escribano, 2020, p. 99), involve either monetary compensation or rental fees. Proprietary subtitling software refers to software made specifically for certain vendors and translation agencies, and tailored for the use of their employees or freelance translators. Since subtitling is becoming more community-based, and with technology becoming more accessible to many people, many free subtitling tools are also appearing on the market. Due to a lack of economic resources or utilities, higher education institutions either tend to use open-source subtitling solutions in the classroom, which may not always meet the standards of the actual translation market, or the students can

only practise subtitling on the computers in the classroom with licences for certain commercial subtitling systems, which are often offered at educational discounts (Bolaños-García-Escribano, 2020, p. 100).

Standalone, desktop-based software solutions refer to local versions of programmes that do not need a web browser or Internet connection for their activation (Pedamkar, 2021). This type of software must be installed on a personal or work computer. Desktop software runs locally on a device and functions independently of a web browser, as opposed to web-based or cloud-based software solutions (Ziff Davis, 2008). Desktop-based subtitling tools require an installation or setup package in a specific operating system, Windows, Mac or Linux. Many of them are open-source, but with limited functionalities. Even though they do not meet the demands of the AVT market completely, they are often used by higher education institutions in the teaching of subtitling. In this study, the features of free desktop-based software solutions will be exemplified with three systems: Subtitle Workshop, Subtitle Edit and Aegisub.

The desktop-based subtitling software interface usually consists of four main components or areas, a subtitle area where the subtitles are listed and the errors visible, a video area where the video is rendered and played with the subtitles presented over it, a media timeline with or without a waveform which also contains the subtitles with their in- and out-times, as well as a toolbox for creating, editing and adjusting the subtitles (Bolaños-García-Escribano et al., 2021b, p. 7). Subtitle Workshop, Subtitle Edit and Aegisub are free, open-source, desktop-based or standalone software solutions for the creation, editing and conversion of subtitles. All three contain very similar tools and functionalities with very few differences.

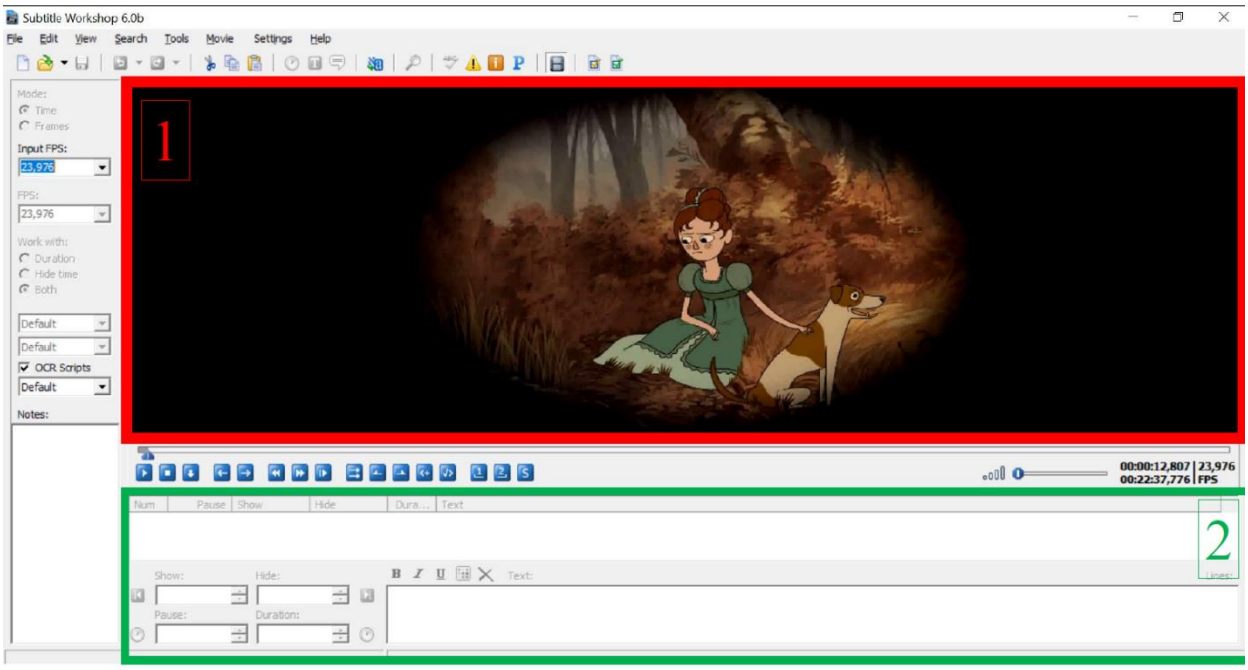
The installation package for Subtitle Workshop is available for download from their official website[1] and is required to activate the application. It supports many subtitle formats and allows the user to save them in a format of their choosing. It has a customizable interface with shortcuts, tools and functions that can be tailored to the user's preferences (Fig. 1). The official website of the software lists features such as automatic durations of subtitles, smart line adjusting, spell check, FPS conversion, the search and replace feature, along with many others. The video player can display the created subtitles, which can be formatted differently, since the software supports style tags. As with the other two software solutions, the video file must

[1] Information regarding Subtitle Workshop was taken from the official website of the software (http://subworkshop.sourceforge.net/ accessed 29 December 2021) or from the software itself.

be uploaded and opened from the device storage. The in- and out-times for the subtitles can be set next to the text box. Also, all of the aforementioned software solutions have a section for the display of the subtitle text, in- and out-times, as well as the duration. Importantly, there is no media timeline with a waveform, while the other two applications have that feature. Similarly, errors are detected automatically in all three software solutions, and emphasized by a red alert in the display section of the interface. Under the Settings tab, in the Save option, the user can choose to have their work saved automatically in intervals of their choice, starting with every single minute.

Figure 1.

Subtitle Workshop interface (1 – video player with subtitle preview; 2 – subtitle editor)



Source: Subtitle Workshop (2022)

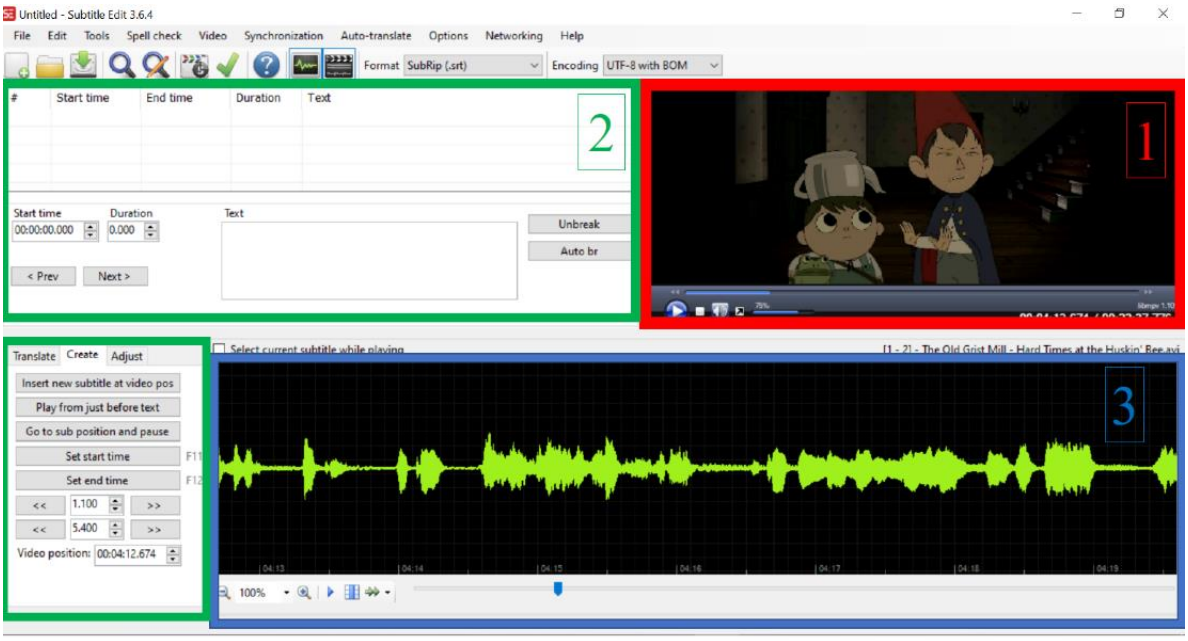
Subtitle Edit (Fig. 2) and Aegisub (Fig. 3) also require downloading the installation packages from their websites[2]. They allow for many different subtitle file formats and have timing functionalities. While Aegisub has the translation assistant functionality, Subtitle Edit offers

[2] Information regarding Aegisub and Subtitle Edit was taken either from blog pages regarding the specific software (https://nikse.dk/SubtitleEdit accessed 29 December 2021), websites focused on applications and software solutions (https://aegisub.en.uptodown.com/windows accessed 29 December 2021; https://subtitle-edit.en.softonic.com/ accessed 29 December 2021; https://aegisub.en.softonic.com/ accessed 29 December 2021) or from the software solutions themselves.

MT via Google Translate, Microsoft Translator or Multi Translator, which requires additional setting up. Along with a red alert in response to errors, the software solutions also offer a spell checker tool. The translator must transcribe the audio. The appearance of the subtitles can be edited to suit the translator's and vendor's requirements. Aegisub and Subtitle Edit offer the waveform or spectrogram feature, which displays the audio patterns of the video file and makes it easier to cue the subtitles. In order for the waveform to function in Subtitle Edit, however, VLC media player also needs to be installed on the device. Burning subtitles onto the video is not a function within Aegisub, but it is possible in Subtitle Edit if the user has downloaded the FFmpeg tool. In Subtitle Edit, this tool also enables the user to auto-generate or import scene or shot changes into the software, where they appear as vertical white lines in the waveform. Aegisub, on the other hand, has a tool for post-processing the subtitle timing with a specific option to snap subtitles to shot changes. Another interesting feature of Subtitle Edit is the wizard for fixing common errors, which allows the user to tick the boxes, marking the aspects of the subtitle file for the system to automatically fix, including empty lines, excess spaces or periods, breaking long lines, upper- and lower-case mistakes, fixing subtitles with more than two lines, etc. Subtitle Edit can be used in dark mode, and it also offers the visual sync feature, allowing the synchronisation of subtitles with a video file. Both Subtitle Edit and Aegisub have either a newly introduced or improved autosave function to keep a user's work safe even if the software crashes. Subtitle Workshop also offers this feature, but it must be activated under the File – Save option, which then presents the user with the option to save their work automatically every few minutes.

Figure 2.

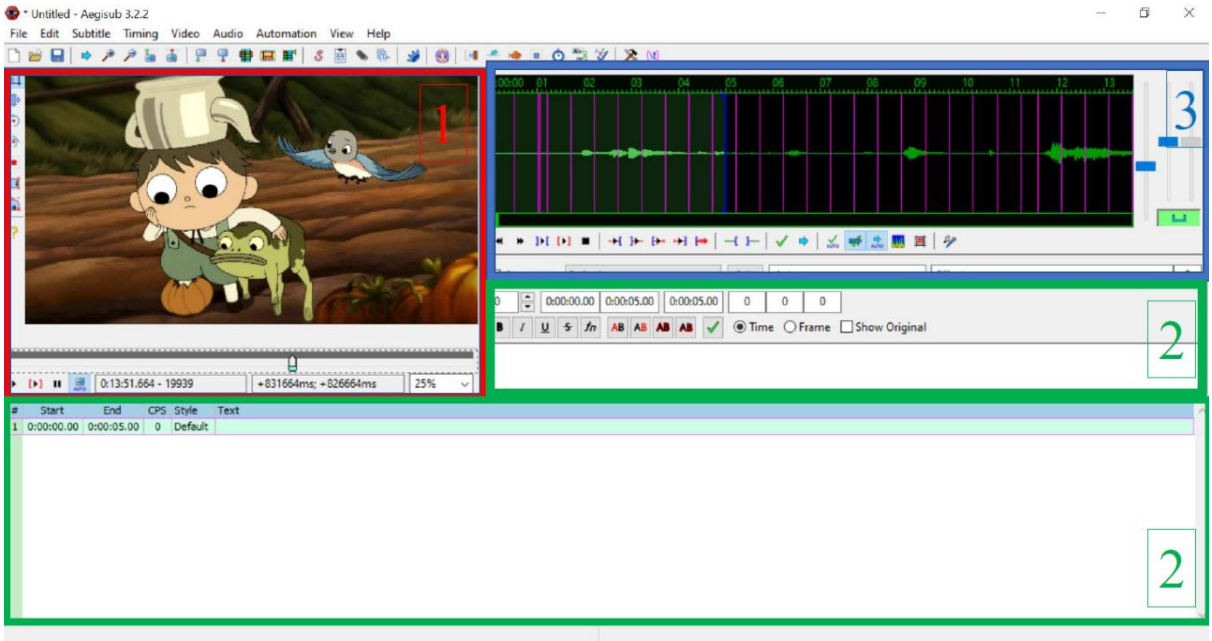
Subtitle Edit interface (1 – video player with subtitle preview; 2 – subtitle editor; 3 – waveform)



Source: Subtitle Edit (2022)

Figure 3.

Aegisub interface (1 – video player with subtitle preview; 2 – subtitle editor; waveform with frame detection)



Source: Aegisub (2022)

2.3. The cloud and cloud-based subtitling software

The U.S. National Institute of Standards and Technology defines cloud computing as:

> a model for enabling ubiquitous, 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. (Mell and Grance, 2011, p. 2)

There are five main characteristics of the cloud – it is an on-demand self-service that allows the consumer to use the functionalities without interacting with the service provider, it requires a network to be accessed from a device, the users share resources pooled according to the principle of multitenancy, the provision of the functionalities of the cloud is elastic and flexible, and the system controls and optimizes resource use (Mell and Grance, 2011, p. 2). The four deployment models include the private, community, public and hybrid cloud (Mell and Grance, 2011, p. 3). The capabilities of cloud computing can be provided to the consumer in three main ways: software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) (Mell and Grance, 2011, pp. 2-3). The development of the cloud and cloud computing began at the end of the 20th century, when computing and digitalisation started spreading rapidly around the world, creating a new work, collaboration and education environment, and bringing significant change in the way we use software solutions and applications, store files or share and cooperate with colleagues (Bolaños-García-Escribano, 2020, p. 107). Cloud computing is often praised for enhancing productivity, time- and cost-effectiveness. It allows the user to delocalise data and store them on the cloud in order to be able to reach them from any device connected to a network, and alleviate the costs and pressures on the device's hardware (Bolaños-García-Escribano, 2020, p. 108). Because of the complex architecture of cloud environments, the security aspect presents one of the biggest demands for the cloud, due to the exposure of potentially sensitive data to multiple tenants without adequate security mechanisms (Bolaños-García-Escribano, 2020, p. 110). As Bolaños-García-Escribano points out, that is important for the AVT industry, in which the material being worked on via the cloud is often confidential or copyrighted (Bolaños-García-Escribano, 2020, p. 111).

Cloud-based translation tools used in the field of AVT allow consumers to conduct translation projects completely online. Desktop-based solutions which require an installation package are still largely being used, but they are also slowly replaced by the new technology better adapted to the modern translation market (Bolaños-García-Escribano, 2020, p. 111). Cloud solutions

are being implemented in many areas of the translation industry outside the field of AVT, with various translation memory (TM), machine translation (MT) and project management (PM) tools. Translation systems in audiovisual translation are continuously being developed to keep up with the changing translation market demands and workflows. Significant inroads have especially been made in the development of cloud-based software specifically designed for subtitling.

Platforms and software solutions for cloud subtitling are online environments or workspaces that can be accessed by anyone, at any time, from any location or device, provided they have a stable Internet connection (Bolaños-García-Escribano et al., 2021b, p. 3). These platforms often offer tools for subtitle editing that allow translators to carry out basic subtitling tasks, including cueing or spotting, translating and reviewing, with added advanced digital functionalities such as shot-change detection and waveform formation as a representation of the audio track, which further assist in and speed up the subtitling process. More advanced technology and services are also being incorporated into these cloud platforms, such as CAT or computer-assisted-translation tools, speech recognition software, as well as MT or machine translation tools (Bolaños-García-Escribano et al., 2021b, pp. 3-4). The platforms also include quality control features that can be partially or fully automated, allowing greater user autonomy. Depending on the parameters set for a specific AVT project, the quality control checks, whether semi- or fully automated, can verify and correct errors regarding maximum display rates, reading speed, the maximum number of characters per line, overlapping or empty subtitles, shot-change synchronisation, as well as linguistic mistakes and other features. They also often include conversion tools and applications for burning or hard-coding subtitles onto the video file (Bolaños-García-Escribano et al., 2021b, p. 4).

The first online subtitling toolkit was created by ZOOsubs in 2009 and, since then, many tech companies and language service providers have quickly developed cloud platforms with subtitle editing tools. Most of these platforms are proprietary, meaning they are meant to be used within a specific company, such as CaptionHub, Plint or iMediaTrans, while very few of these platforms are available for commercial use and general users on the basis of on-demand fees. One such platform is OOONA. Some of these software solutions, including OOONA, can be used both for project management (OOONA Manager) and translation proper (OOONA Tools) (Bolaños-García-Escribano, 2020, p. 113). Because of the pay-per-use or pay-as-you-go models of purchase and payment, and the software solutions not requiring an installation package, the cloud solutions have successfully taken off among freelancers and translation

agencies (Bolaños-García-Escribano, 2020, p. 114). Such paid cloud-based solutions allow consumers to work on their translation projects in a professional, online and collaborative environment on a pay-as-you-go basis with monthly or yearly subscriptions. Online subtitling environments allow for closer cooperation between subtitlers in translating audiovisual material, which ultimately creates a more interactive, communicative and collaborative workflow (Bolaños-García-Escribano, 2020, p. 114). This aspect of collaboration between audiovisual translators in different geographical locations has been emphasized, with the introduction of mainly online classes during the COVID-19 pandemic, forcing students and teachers to work and communicate from their homes. The software allows working on the same material or with the same templates, which increases productivity and harmonization (Bolaños-García-Escribano, 2020, pp. 114-115). Software developers, like the OOONA team, are often open to feedback from users and are ready to react promptly to improve or change the experiences of consumers with their product (Bolaños-García-Escribano, 2020, p. 115). Alongside several of the above-mentioned positive aspects of cloud subtitling, cloud platforms enable companies to more easily monitor the work of their employees and freelance translators, they allow project managers to oversee all stages of a localisation workflow, as well as the clients to have a more active role in the service they are receiving. Cloud software ensures greater security due to the copyrighted material remaining exclusively on the company's servers, without translators being required to download it. The platforms can create subtitles in various file formats, which can later be processed by other applications or systems. Lastly, on a logistical note, which has become vital in the pandemic environment, staff and freelance translators can work remotely, with the need for physical offices and renting costs greatly reduced. Cloud-based subtitling and translation platforms seem to become "the ultimate virtual workspace" (Bolaños-García-Escribano et al., 2021b, p. 5).

Online cloud-based tools built specifically for subtitling can be free, paid or proprietary, with OOONA Tools being one of the most prominent paid subtitling editors on the market today (Bolaños-García-Escribano, 2020, p. 113). Even though the software is often proprietary or paid, subtitling trainers, educators, and students have expressed their willingness and interest in integrating cloud-based subtitling solutions into their syllabi or programmes (Bolaños-García-Escribano, 2020, p. 115).

2.4. OOONA

OOONA Ltd[3] is a company founded in 2012 which works to develop management and production tools and systems for the localisation industry. The products they currently offer on their official website include OOONA Manager – a cloud-based management system, OOONA Tools – professional production tools, OOONA Integrated for the integration of OOONA into the user's platform, OOONA Cloud – a full hosting solution, OOONA EDU – a cloud-based platform designed for subtitling and captioning training, OOONA API for enterprise integrations and The Poool – a directory for professionals working in the audiovisual localisation industry.

This overview will focus on OOONA EDU, a cloud-based platform designed specifically for subtitling and captioning training, because this was the package made available for one of the groups of students involved in the current research. Since OOONA is a decentralised system, it allows access to the tool from any location, providing that the device has access to a stable Internet connection. It is not proprietary, meaning it is not linked to a media or language service provider, but a paid Software-as-a-Service solution (SaaS) that offers monthly or annual subscription plans. OOONA Tools and OOONA EDU offer similar tools and functionalities, although OOONA Tools, as a professional package, also contains the Convert feature, a conversion tool for any subtitle format, and a Compare feature, allowing subtitlers to compare two subtitle files side by side. Both products seem suitable both for professionals and students, encompassing almost all stages of a subtitling project. Most versions and OOONA tools require no additional software installation. The interface is user-friendly, intuitive and easy to use. OOONA EDU can perform multiple tasks, including creating subtitles from scratch, translating templates, transcribing, spotting subtitles, hard-coding subtitles onto the video, and many others. OOONA offers three types of EDU packages or bundles: the EDU Standard Bundle, the EDU PRO Bundle and the EDU Virtual Classroom. Students participating in this study were provided with temporary licences for the OOONA EDU PRO package. The software supports any language and can import and export almost any subtitle file format. Since OOONA is cloud-based, it allows online access from any computer, whether it is Windows or Mac, and provides online backup and data saving functionalities, even though it exclusively

[3] Information regarding OOONA as a company, its products, tools and features have been taken from their official websites listed in the bibliography.

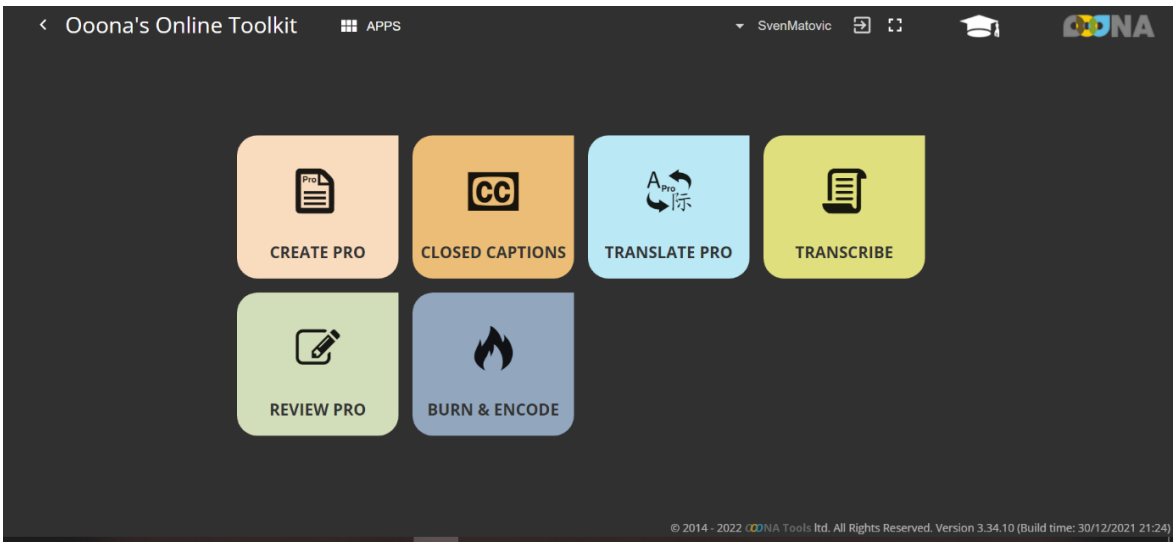
functions on Google Chrome. This platform is due to receive the AVT PRO Certification – a professional qualification that proves its high professional standards, suitability and quality.

For certain features to function in the professional versions of the Create, Translate and Review tools, as well as Burn & Encode, an additional plugin, OOONA Agent, had to be installed on the user's device. The Agent has fairly recently been made virtual, meaning it can be downloaded and installed on the device, but it does not have to be for it to function. The OOONA Agent is a plugin for analysing video files uploaded from local storage, generating the waveform, detecting shot changes, as well as video rendering in Burn & Encode (Yoffe, 2021). Therefore, although it is possible to import video material from local storage, cloud storage or via a web link, the waveform and shot-change detection will only function for local files.

Six tools are included in the OOONA EDU PRO package, Create PRO, Translate PRO, Review PRO, Closed Captions, Transcribe and Burn & Encode (Fig. 4). The software enables the user to modify the interface, change the sizes of the different components, adjust the properties accordingly, and tailor the working environment to their own subtitling needs. This SaaS solution stores online the material imported from a local device, cloud storage or via web links.

Figure 4.

OOONA EDU tool menu

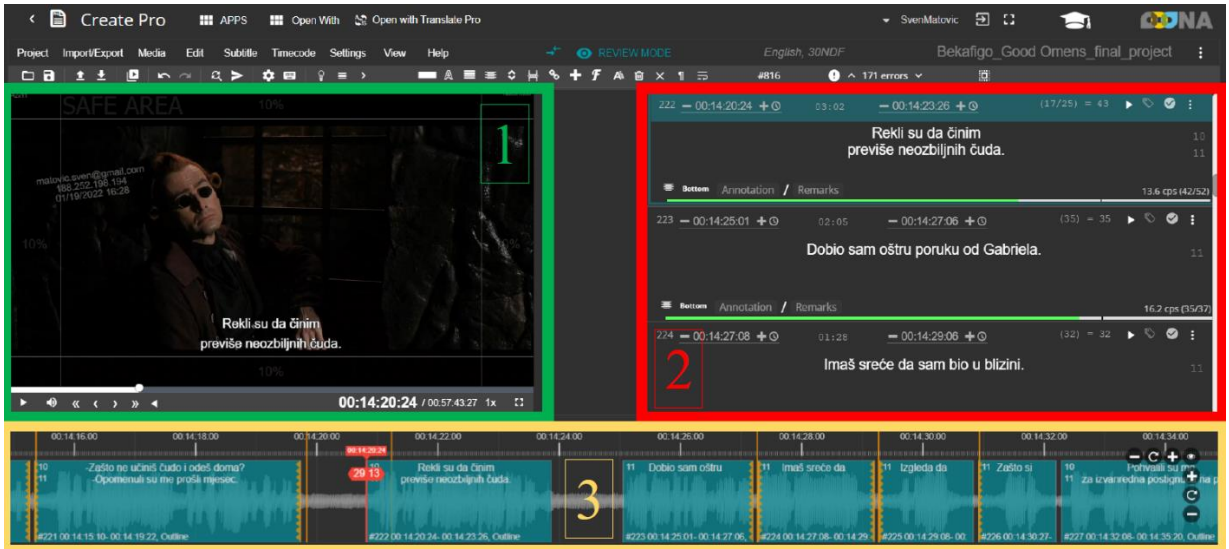


Source: Ooona (2022)

Both Create, which is part of the standard version, and Create PRO are tools for creating subtitles in any language from scratch, directly from the audio (Fig. 5). They consist of a subtitle editor with text editing and formatting options, as well as key information regarding each subtitle, such as the timecode, duration, number of characters per line and reading speed, measured in characters per second (cps) or words per minute (wpm). The tool offers the option of splitting and merging subtitles. The video player allows for a real-time preview of videos with the created subtitles. The timeline of the video and audio presents the subtitles and their duration as blue boxes, which can be dragged, prolonged or shortened. Each subtitle in the subtitles table is accompanied by a bar that measures the reading speed and alerts the translator if the reading speed is inappropriate in relation to the project settings, which can also be adjusted (Fig. 10). A red alert icon indicates technical errors next to the subtitles, which is expanded upon by the system itself. Along with cuing and translating, Create PRO can also be used for the production of templates. Hotkeys or shortcuts can be modified and personalized (Fig. 6). The professional version of the tool also offers the waveform functionality, shot-change detection, and custom QC checks and fixes (Fig. 8), which are only functional with the OOONA Agent. This is also the case in the Translate PRO and Review PRO tools.

Figure 5.

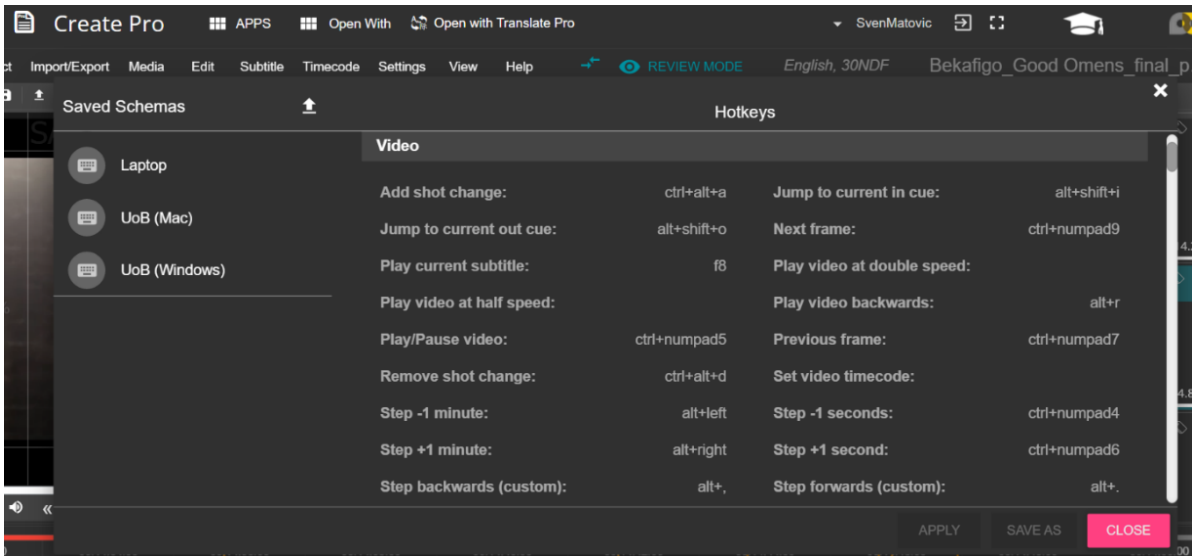
Create PRO (1 – video player with subtitle preview; 2 – subtitle editor with key information like the in-time, out-time, reading speed and duration; 3 – timeline of the video and audio, waveform, lines indicating shot changes, subtitles in blue boxes)



Source: Ooona (2022)

Figure 6.

Customisation of the Hotkeys

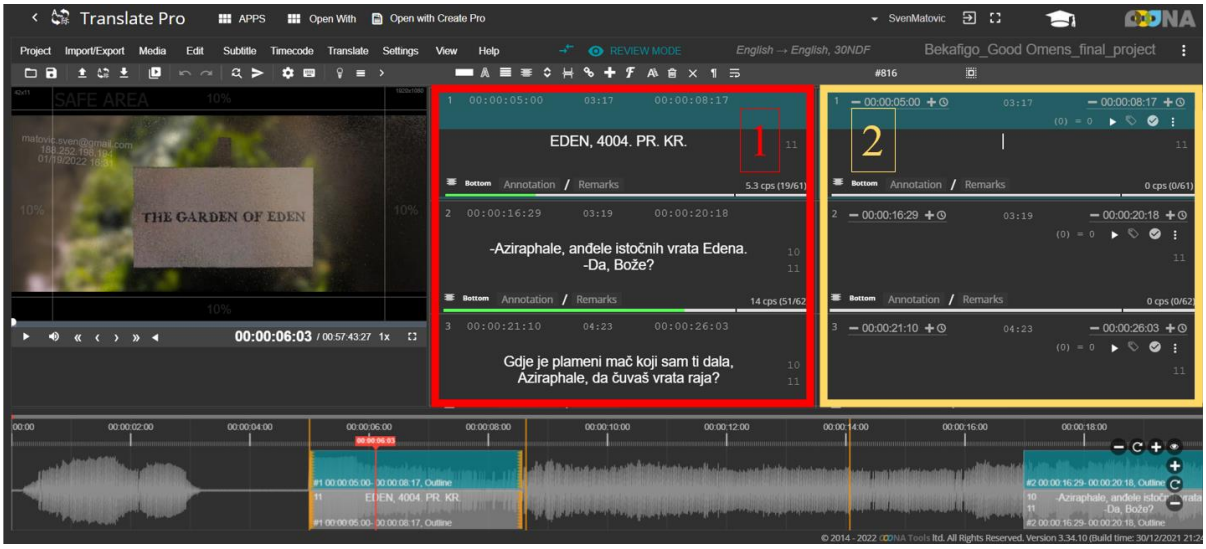


Source: Ooona (2022)

Translate and Translate PRO are tools used for the translation of pre-timed subtitle templates (Fig. 7). The waveform, shot-change detection and QC checks are only available in the PRO version. The text editor consists of two columns, for the source text and the translation. The original templates, timecodes and source text cannot be edited, while the target subtitles can be modified and adapted to the target language needs if the timecodes are not locked in the project settings. With the subtitle editor, the video preview, the settings bar, the hotkeys and the timeline, the interface for most tools included in this overview includes similar features.

Figure 7.

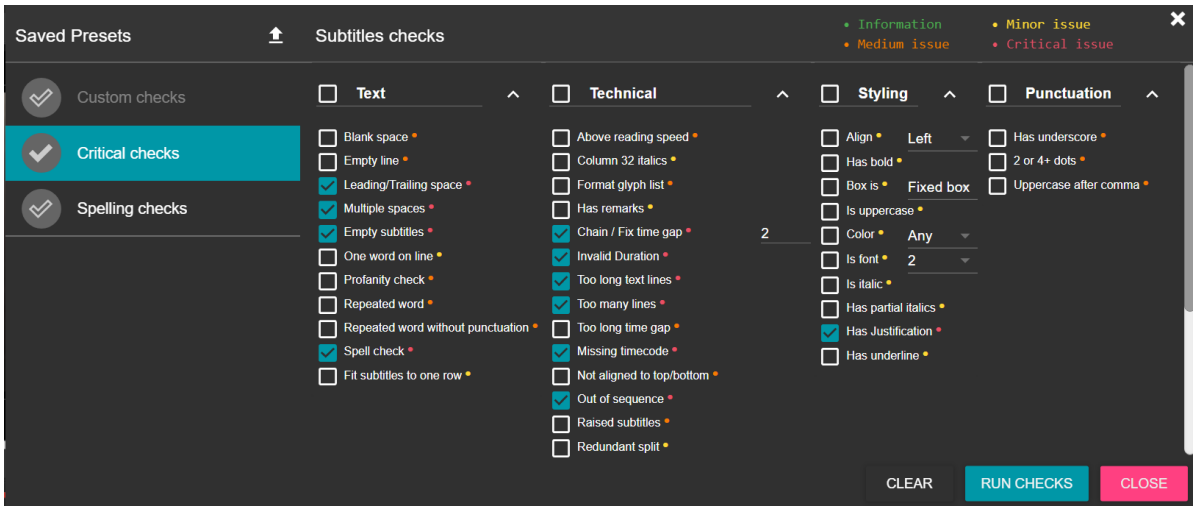
Translate PRO (1 – source text column; 2 – translation column)



Source: Ooona (2022)

Figure 8.

Running customised subtitle QC checks according to different parameters



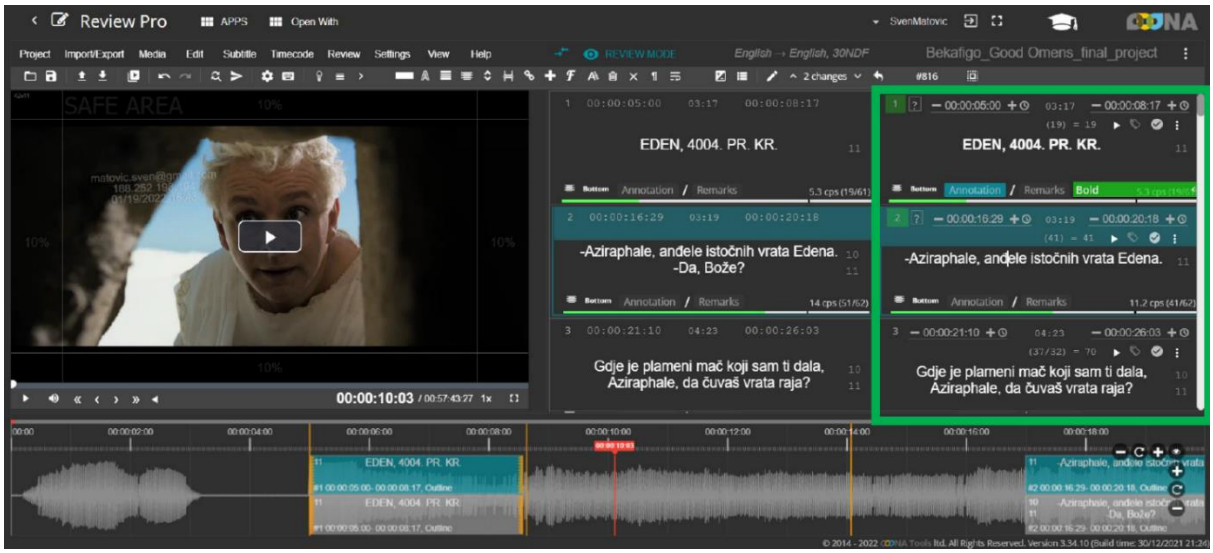
Source: Ooona (2022)

Review and Review PRO allow the user to revise or review subtitles by other subtitlers, QC subtitles or send subtitles for online reviewing (Fig. 9). Their interface also includes a real-time preview of the video with subtitles, while the PRO version contains the waveform, shot-change detection and custom QC features. Subtitlers, students and teachers can leave annotations, include remarks, and track the changes they have made. The subtitles are presented in two columns, one with the original subtitles and the other with the revised version. This tool can be useful for the teacher's feedback on the students' work, for the students to correct and annotate

each other's works, or even for checking one's own work. Students may develop their skills to analyse, annotate, comment, review and correct the work of others.

Figure 9.

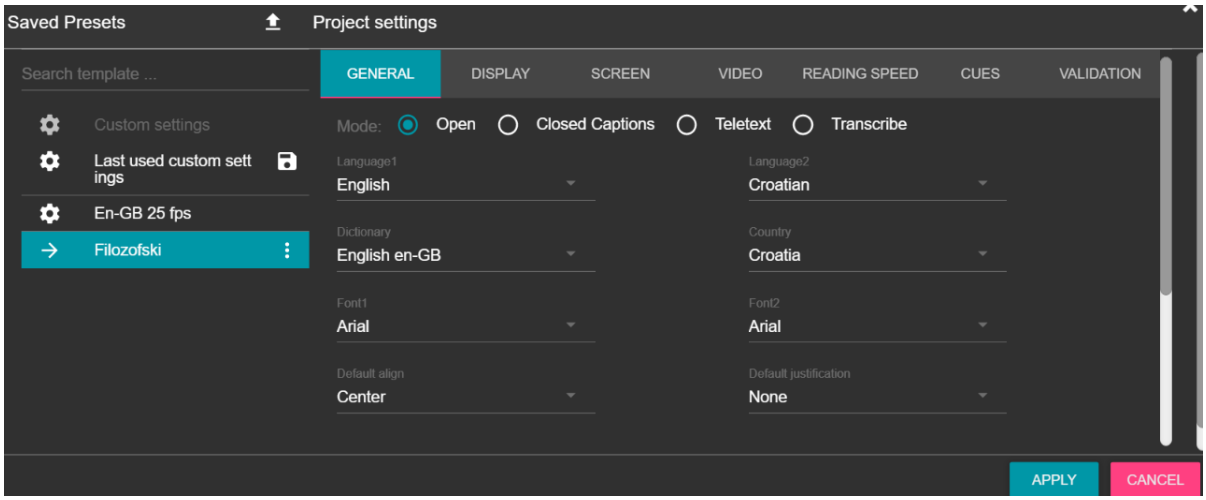
Review PRO (the column for the revised version of the subtitles marked by the green square)



Source: Ooona (2022)

Figure 10.

Customisable project settings

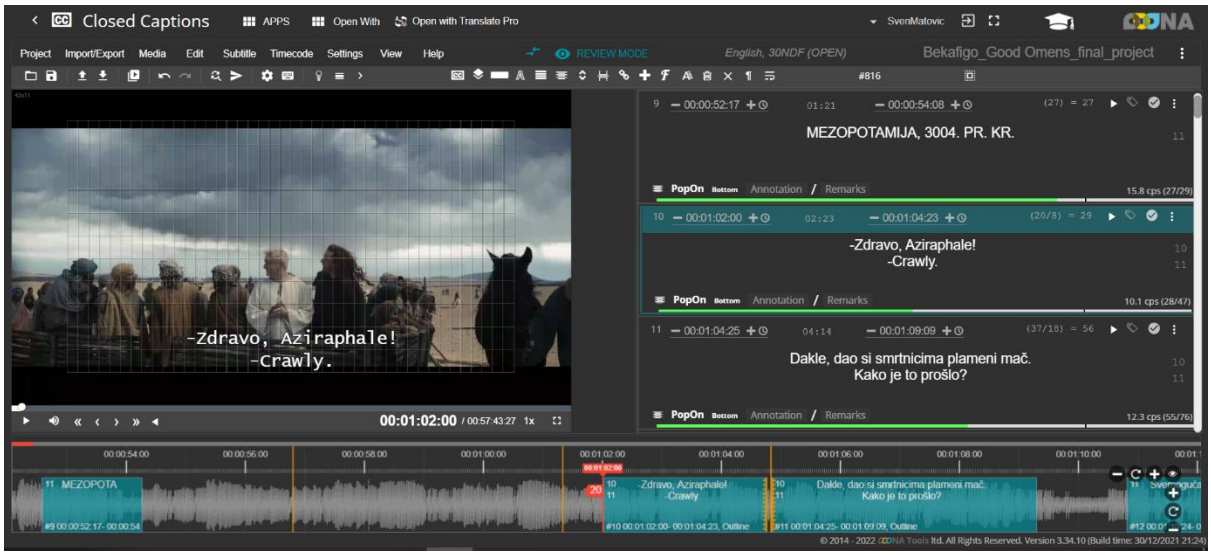


Source: Ooona (2022)

Editing, placing, styling and exporting closed captions can be done using the Closed Captions tool, which has a similar interface and features as the aforementioned OOONA EDU tools (Fig. 11).

Figure 11.

Closed Captions

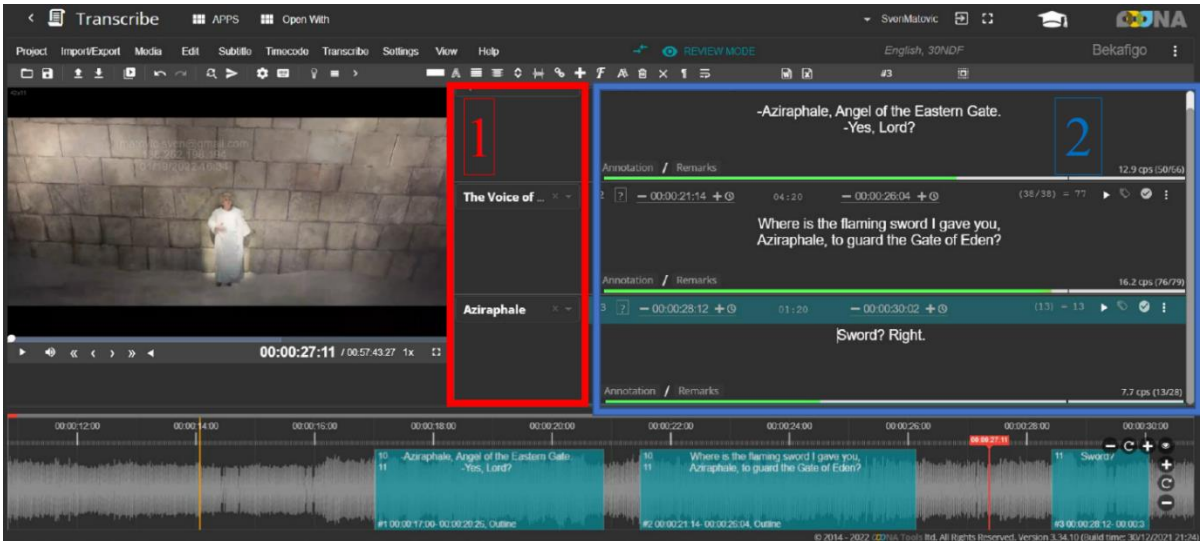


Source: Ooona (2022)

The Transcribe tool allows users to create dialogue lists and script files, set characters, export the documents to Word or Excel, and customize their layout (Fig. 12). This tool also has an optional waveform feature and shot-change detection.

Figure 12.

Transcribe (1 – speaker IDs; 2 – subtitle editor)

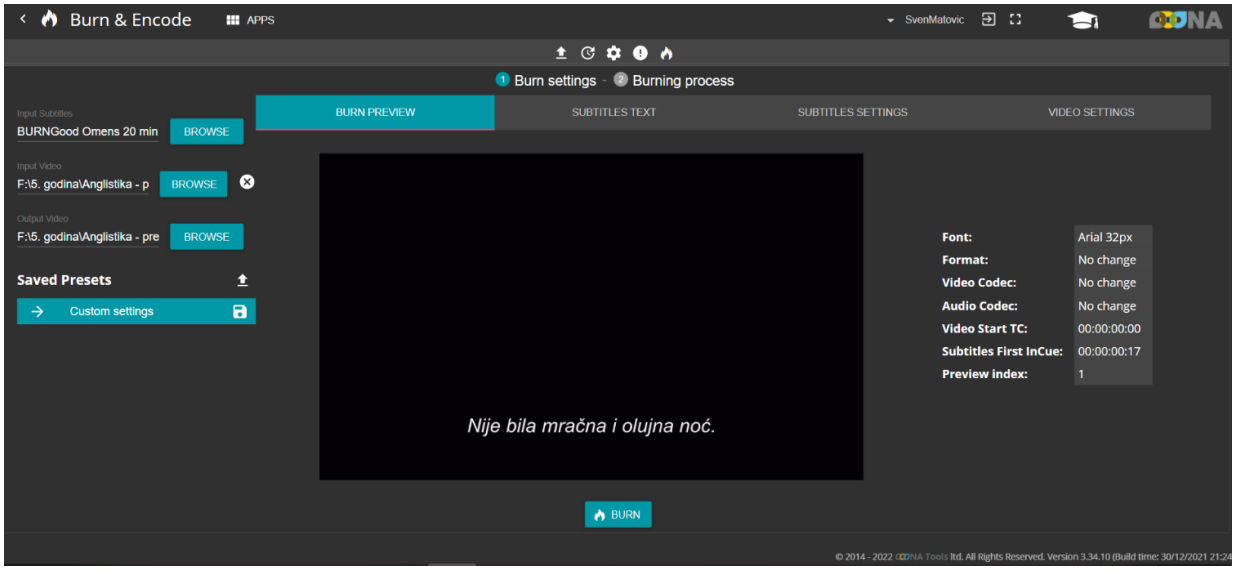


Source: Ooona (2022)

Burn & Encode allows the subtitler to burn, render or hardcode subtitles onto the video using various subtitle files (Fig. 13). Subtitles are then rendered in the same resolution and frame rate, and there is also an option to trim the video within the tool. This tool requires the OOONA Agent plugin.

Figure 13.

Burn & Encode



Source: Ooona (2022)

3. Translation and AVT market circumstances

Since technological developments, particularly the digitisation of the image in the AVT industry, play a major role in the entire translation profession. They are inextricably linked with AVT due to its multimodal nature and the role that different software solutions play in all stages of the localisation and translation process, progressively more localisation companies and AVT producers have been introducing cloud-based technology into their translation workflows since the beginning of the 21st century. This is being done to increase productivity, minimise costs, and enhance and adapt online environments (Bolaños-García-Escribano et al., 2021b, p. 2). Cloud-based tools are increasingly introduced into translators' workbenches.

The current AVT market is characterized by numerous audiovisual productions, video-on-demand giants streaming and creating an enormous number of audiovisual media, with an equally enormous demand for localisation, a large demand for high-quality and rapid production of subtitles. This unpredictable and fast-paced industry requires a high level of adaptability to the ever-changing requirements and standards, with a plethora of languages to translate into for the growing global market. One of the ways language service providers and translation vendors attempt to adapt to these conditions is by introducing more and more online workflows, trying to increase productivity, boost active online communication and cooperation, and enable the monitoring of freelancers' work to achieve a high-quality output. At the turn of the century, the technological turn brought many changes in translation workflows (Bolaños-García-Escribano et al., 2021b, p. 3). However, even though LSPs have even used cloud translation platforms since the early 00s to ensure more flexibility and move away from static desktop-based platforms, today the translation market seems to be entering the more specific cloud turn to adapt to the "on-demand, internetised and hyper-audiovisualised mediascape" (Bolaños-García-Escribano et al., 2021b, p. 3). Since AVT projects tend to be fast-paced, complex and numerous, any change introduced into the profession that could simplify or facilitate the workflow has been welcomed.

Furthermore, to open to wider audiences around the world and adapt to the growing global market, video-on-demand streaming platforms, such as Netflix, have begun producing local audiovisual content in languages other than English (Bolaños-García-Escribano et al., 2021a, p. 5). However, translating from languages that are not English into many other languages can be an issue because of the lack of less frequent language combinations. This may not be provided with training or can prove much more expensive, since training courses tend to focus

on combinations involving major languages. To adapt to this market circumstance and localise for more languages, LSPs and VOD platforms have introduced pivot subtitle templates into their workflows. Pivot templates are timed and translated subtitle templates in a second, pivot language, different from the source language, which then serves as a bridge between the source and target languages. The pivot language is most often English. This practice has its downsides, as mistakes, ambiguities or misinterpretations in the pivot translation can be transferred into the target language. However, since it is increasingly common and requested in the profession, it is important to introduce them in subtitling training as well (Bolaños-García-Escribano et al., 2021a, p. 5).

With a view to measuring and upholding quality in subtitling, improving consistency and making requirements clear, manifold guidelines, style guides, standards, norms and rules exist in various forms on the audiovisual market, which may vary from language to language, but also from company to company and country to country. The wide range of institutions and bodies that create them include regulatory bodies, public broadcasters, global audiovisual platforms, various localisation companies and language service providers, institutions, associations, as well as the academic community (Malaeva, 2017). They overlap in many aspects, primarily regarding the position of the subtitle on screen, the number of lines, text positioning, font colour and background, and other general requirements. The number of characters per line, as well as the maximum duration or reading speed, may differ according to different guidelines. Punctuation rules vary from language to language. Guidelines often also include timing aspects, such as the in- and out-times, as well as the prescribed gap between two subtitles. Shot changes play an important role in many style guides, requiring them to be respected to avoid confusion and re-reading. A subtitle most commonly has to be anchored over a shot change to allow the viewer time to adjust to a new scene without the subtitle and the shot changing simultaneously. Guidelines regarding segmentation almost always require the subtitler to respect linguistic and cognitive units and to segment the lines in a logical manner. Guidelines and style guides may include rules on working with dialects, culture-specific elements, taboo words and templates.

One of the first documents outlining instructions for a high-quality production of subtitles was The Code of Good Subtitling from 1998, written by Mary Carroll and Jan Ivarsson (Ivarsson and Carroll, 1998). Even though professional practice and the market have changed drastically since its date of publication, there will always be certain qualities and rules inherent to subtitling practice. Today, since different countries and markets abide by their own instructions

and standards, it is impossible to produce a universal solution for the best subtitling practice. The different purposes, audiences, formats, genres, cultures and languages affect the way the profession and organisations, associations, institutions and translators function and subtitle. One of the associations that have attempted to unify the standards for professional subtitling practice is ESIST[4], the European Association for Studies in Screen Translation, which created a comprehensive list[5] of existing guidelines for interlingual subtitling, SDH/closed captioning, dubbing and voice-over and audio description ("AVT guidelines and policies", 2021). Among many other works, the list also includes the Guidelines for Quality Subtitling in Croatia by the Croatian Association of Audiovisual Translators (DHAP, n.d.) and the Timed Text Style Guide[6] by Netflix (Netflix, n.d.). ESIST works on promoting audiovisual translation, media accessibility, and professional standards in training and practice.

For the purpose of exemplifying standards, requirements and rules imposed upon subtitlers on the market today, the detailed Timed Text Style Guide published by Netflix will be presented in further detail. The Netflix Partner Help Center[7] offers in-detail, specific Timed Text resources to ensure the consistency and quality of subtitles in all the languages they offer. This will be followed by an overview of five different, but largely overlapping style guides pertinent for subtitlers in general, as well as those specific for the Croatian and English language, the General Requirements, Timing Guidelines, Subtitle Templates, the English Timed Text Style Guide and the Croatian Timed Text Style Guide.

The Timed Text Style Guide, which contains the general requirements[8] pertaining to any timed text, should be followed, along with other language-specific, timing and file-specific guidelines (Netflix, 2021a). Most topics covered in this guide appear in the guidelines for individual languages, as well as template creation. The guide primarily covers technical specifications like the duration of the subtitles, file format, glyph list regarding the characters that can be used, line treatment and positioning. The minimum duration of a subtitle is five sixths of a second, while the maximum is seven seconds. Ideally, subtitles should only contain one line, but if the line has to be broken, a subtitle can consist of two lines at the most. If it is necessary to break the line, the style guide indicates at which points to break them, as well as where not

[4] https://www.esist.org/ accessed on 14 January 2022
[5] https://www.esist.org/resources/avt-guidelines-and-policies/ accessed on 14 January 2022
[6] https://partnerhelp.netflixstudios.com/hc/en-us/sections/203480497-Timed-Text-Style-Guides accessed on 26 January 2022
[7] https://partnerhelp.netflixstudios.com/hc/en-us accessed on 14 January 2022
[8] https://partnerhelp.netflixstudios.com/hc/en-us/articles/215758617-Timed-Text-Style-Guide-General-Requirements# accessed on 13 January 2022

to separate them. The subtitles should be centre justified, at the top or bottom of the screen, with exceptions for certain languages. It is important to avoid overlap with on-screen text. The general requirements include instructions on consistency, Netflix Credit Translations, the title cards or dedications that should be subtitled, the treatment of currency, brand names, quotations, translator credits and technical aspects.

Subtitle Timing Guidelines[9] provide instructions on how to time subtitles to the shot and the audio (Netflix, 2021b). Subtitles are supposed to be neatly timed to ensure an effortless viewing experience for the audience, for whom watching is supposed to feel "like they are watching our content, not reading it" (Netflix, 2021b). One of the main requirements is to sync subtitles with the image and the audio, with the minimum gap between them set at two frames. The timing can be done in relation to the audio or shot change, depending on the specific requirements of individual productions. When the subtitles are synced with the audio, the in-time must be set as close to the first frame of the audio as possible, while the out-time can be extended up to half a second after the audio ends, using a waveform for reference. If gaps between subtitles are smaller than 12 frames, they are closed to two frames by extending the out-time of the preceding subtitle, which is referred to as "chaining". When it comes to the synchronisation with shot changes, the in- and out-times may be extended to be in sync with shot changes within the half-second parameter. Either the in-time is set on the frame of the shot change, or the out-time is set two frames before the shot change. In contexts where dialogue crosses shot changes, subtitles may also cross them if the dialogue features in a subsequent scene. In this case, the in-time can be set at least half a second before the shot change or on its first frame, while the out-time is set at least half a second after or two frames before the shot change. Ultimately, Netflix advises exercising good judgement in all contexts, because decisions regarding timing are often subjective. There are not supposed to be any gaps of 3-11 frames between subtitles. The gaps are either condensed to two frames or bigger than half a second. If it is impossible to respect the duration, reading speed, timing, positioning and shot-change rules, the subtitler is allowed to re-segment, re-time or merge subtitles. The guidelines also contain requirements regarding forced narratives, which must mimic the timing of on-screen text, with the FN rules overriding timing to shot and audio rules. This emphasizes that Netflix has established a hierarchy of their sets of rules, which reflects their subtitling priorities.

[9] https://partnerhelp.netflixstudios.com/hc/en-us/articles/360051554394-Timed-Text-Style-Guide-Subtitle-Timing-Guidelines accessed on 13 January 2022

The Style Guide for Subtitle Templates[10] is similar to the General Requirements. Netflix considers templates the basis for subtitling in other languages, and includes pivot language template guidelines. Along with all the above-mentioned categories regarding the linguistic, technical and formal aspects of subtitles, the template guidelines include template coverage, indicating that all plot-pertinent dialogue and events have to be covered. They also highlight the importance of annotations, providing additional context for translators regarding cultural references, idioms, slang, jokes, sarcasm and irony, play on words, intent, register, offensiveness and many other topics (Netflix, 2021c).

The English[11] and Croatian[12] Timed Text Style Guides will not be explained in detail because they contain analogous elements, as well as specific linguistic guidelines, which are not in the focus of this thesis, regarding the treatment of specific abbreviations, acronyms, character names, dates, numbers, punctuations, quotes, songs, titles and other elements (Netflix, 2021d; Netflix, 2021e). Both style guides also contain a section on subtitling for the d/Deaf[13] and hard of hearing, as well as requirements for the treatment of dual speakers, font, on-screen text, foreign dialogue, italics, repetitions and ensuring continuity. The reading speed requirements vary between the languages, with 20 cps for adult and 17 cps for children's content in English and 17 cps for adult and 13 cps for children's content in Croatian.

In order to point out how different sets of guidelines can be, the Guidelines for Quality Subtitling in Croatia[14] by the Croatian Association of Audiovisual Translators (DHAP), for example, indicate that subtitles should not cross between different scenes, but that it is not common to interrupt the subtitle with every shot change within the same scene (DHAP, n.d.). Furthermore, in contrast with Netflix's Style Guide, a minimum of three frames is supposed to be left in the gap between subtitles as opposed to two (DHAP, n.d.).

To conclude, like almost all other style guides available on the Internet, the Netflix Timed Text Style Guides set specific standards regarding duration, file format, line treatment and positioning. It is visible from the guidelines that subtitlers are expected to know how to

[10] https://partnerhelp.netflixstudios.com/hc/en-us/articles/219375728-Timed-Text-Style-Guide-Subtitle-Templates accessed on 13 January 2022
[11] https://partnerhelp.netflixstudios.com/hc/en-us/articles/217350977-English-Timed-Text-Style-Guide accessed on 13 January 2022
[12] https://partnerhelp.netflixstudios.com/hc/en-us/articles/115002790368-Croatian-Timed-Text-Style-Guide accessed on 13 January 2022
[13] The capitalized term "Deaf" refers to people who consider themselves a part of a linguistic and cultural minority/community, while the term "deaf" refers to hearing loss (Leeson and Vermeerbergen 2010: 324)
[14] http://dhap.hr.cloud.hr/Content/documents/GuidelinesForQualitySubtitling.pdf accessed 14 January 2022

consistently and thoroughly work with subtitle templates and understand the timing of subtitles with respect to detailed audio and shot-change rules, applying good subjective judgement. Forced narratives are another feature of the subtitling practice their employees need to be familiarised with, as well as providing detailed annotations for other translators. Spotting and working with timecodes, as well as adjusting the reading speed are expected to be done precisely and accurately using a waveform for reference.

4. AVT education, competences and resources

The audiovisual translation industry and professional practice and the requirements and standards they set constitute a lodestar for the academic discipline. This means that classroom activities, education and courses must constantly keep up with the swift technological change and progress in order to keep the students ready for the current market circumstances and to avoid the "second-level digital divide" which leaves students new in the professional world with a set of largely different and incompatible skills compared to the ones needed by the industry (Bolaños-García-Escribano et al., 2021b, p. 8). Consequently, this divide makes it difficult for them to enter the dynamic translation industry. Hence, subtitlers-to-be have to be exposed to the newest technologies and professional standards and processes they will face when they step into the real market.

Although it is not easy to precisely determine when AVT training first started being incorporated into higher education curricula, the first courses date back to the late 1980s and early 1990s in Western Europe (Cerezo Merchán, 2018, p. 468). Riding on the back of the subtitling software development, the advent of the DVD, the digital revolution, image digitisation, and lately, the rise of the cloud and new translation technologies, AVT as an industry and, consequently, an academic discipline, has thrived, grown, evolved and adapted. More recently, along with image digitisation, the growing amount of content produced and distributed by video-on-demand streaming services, such as Hulu, Netflix, Disney+, Amazon Prime, HBO Now and Apple TV+ has led to an increased demand for qualified, professional subtitlers and, therefore, a continuous increase in the number of courses offered at different higher education institutions and translator training centres and incorporated into translation modules, both at the undergraduate and postgraduate levels, while full postgraduate AVT courses are also being developed (Bolaños-García-Escribano et al., 2021a, p. 2; Bolaños-García-Escribano et al., 2021b, p. 6). In the past couple of decades, therefore, the number of AVT courses has grown exponentially. On the other hand, when the demand was pretty limited, training or education was usually done internally, within the company or the workplace, outside of educational or training institutions, on a smaller scale, either because translators had to keep up with the ever-changing industry to learn new skills or because universities did not have enough resources to provide students with the appropriate training and equipment (Cerezo Merchán, 2018, p. 468).

Since subtitlers and, in general, audiovisual translators, are faced with a plethora of challenges and tasks throughout their work, such as translating, dealing with linguistic and culture-specific challenges, technical subtleties and matters regarding spotting, proofreading, providing feedback, working with templates, working with different file formats, types of web architecture and software solutions, but also cooperating and communicating with other translators and clients, students ought to be exposed to a multitude of different tasks throughout their training, with a special emphasis on technology.

Many pedagogical and methodological approaches established in the study of AVT didactics have been substantiated by the competence-based model (Cerezo Merchán, 2018, pp. 469-470). Various authors have discussed the skills that are necessary for the practice of subtitling in different ways and from different perspectives (Hurtado-Albir, 2015; Cerezo Merchán, 2018). Due to the technical, linguistic and cognitive efforts and constraints that subtitling needs to accommodate, it requires activating various, but interconnected skills, alongside translation competence, "the underlying system of knowledge needed to translate" with various sub-competencies (bilingual, extra-linguistic, knowledge about translation, instrumental and strategic) (PACTE, 2003, p. 16). The competence-based model relies on the argument that training in the field of audiovisual translation should be guided by specific learning outcomes, objectives and competences (Bolaños-García-Escribano et al., 2021b, p. 7). Among the authors that have provided classifications of specific AVT competences, the classification of Cerezo Merchán (2018) is among the most recent, preceded by the classification of Hurtado-Albir (2015). Hurtado-Albir (2015, p. 262) proposed six competence categories based on her learning objectives: methodological and strategic, contrastive, extralinguistic, occupational, instrumental and translation problem-solving competences. Cerezo Merchán (2018) emphasizes that competence-based training does not only require a set of profession-specific, translation-related competences, but also transversal competences, relating to many different disciplines (pp. 470-471). Therefore, synthesizing various approaches and previous classifications, including Hurtado-Albir's (2015), the PACTE group's (2003) and various other authors', Cerezo Merchán identifies the following competences: contrastive, extralinguistic, methodological and strategic, instrumental and translation problem-solving competences (Cerezo Merchán, 2018, p. 471). Occupational competences in Hurtado-Albir's (2015) classification refer to successful performance in the translation labour market and abiding by standards of professional practice (p. 262). Instrumental competences in both classifications refer to the mastery of resources and tools, including specific AVT software, software for

managing audiovisual files, speech recognition software and information resources (Hurtado-Albir, 2015, p. 262; Cerezo Merchán, 2018, p. 471).

Along with competences related specifically to the practical aspects of translation proper, it is important for occupational and particularly instrumental competences to play a significant role in subtitling training programmes from the very beginning. Considering the dramatic pace at which market requirements evolve and change, students have to be prepared and equipped for the labour market they will be entering. On the other hand, due to the central role technology and its advancements play in the field of audiovisual translation, teaching students how to use particular software solutions, various functionalities and tools but also how to adapt to changes and approach new technological solutions should be conceived as part of the foundation on which additional AVT skills can be built. Technological development and the gradual introduction of new software solutions into subtitling training programmes have already led to changes in the way subtitling education can be conducted. Even though its procurement may not always be completely feasible for higher education institutions, specialised subtitling software may make a significant difference in the preparation of students for professional practice.

Acquiring appropriate resources for subtitling training programmes is not always an easy task and there are a few different approaches that higher education institutions can take to provide their students with the means to learn. One solution is purchasing licences for commercial subtitling solutions, which often proves difficult or unfeasible due to the financial requirements that cannot be met. Universities often make these subtitling platforms available in computer labs or specialised classrooms, which reduces the students' flexibility and limits their studying and training to that specific location. This has proven increasingly impractical and limiting during the COVID-19 pandemic, which tested the universities' capabilities for online and distance learning. Consequently, many universities opt for freeware, which may not reflect the current market needs and is not often used in the professional subtitling world (Bolaños-García-Escribano et al., 2021b, p. 8). The third and latest possibility includes licensed software solutions that are cloud-based and therefore not strictly limited to classroom use at a specific university. Regardless of the fact that the gap between higher education institutions and the professional world is difficult to bridge completely, ideally, subtitling software used in subtitling training should simulate real professional environments, workflows and translation projects to as high a degree as possible.

The market students have to prepare for includes the acceleration and amplification of the distribution of AVT content, as well as its localisation, the expansion of the entire AVT global market, very tight deadlines due to the urgent demand for subtitles, issues regarding security and copyright infringement, as well as an unstoppable rate of technologic change and development which renders everyone at least slightly unprepared at all times (Bolaños-García-Escribano et al., 2021b, pp. 17-18). Ultimately, it is important for teachers and trainers to constantly re-evaluate how well their course is adapted to the requirements of the profession. Attention should be paid to the software used in the industry and professional practice, the standards set by various vendors, LSPs, VOD services and similar bodies in the AVT industry, as well as the subtitling/text-timing guidelines available for certain companies that can give insight into the skills that are required on the market and for specific positions. We are currently in a time when, as the industry undergoes a drastic change, so do the methods and priorities of teaching, requiring not only students to learn and acquire new skills, but also the teachers to adapt and keep up with new demands and technologies, especially in the pandemic context which put a great emphasis and strain on distance learning.

5. Subtitling at the Faculty of Humanities and Social Sciences, University of Zagreb

At the English Department of the Faculty of Humanities and Social Sciences, University of Zagreb, subtitling is taught as part of a course entitled Areas of the Translation Profession[15], offered in the third semester of the four-semester translation track of the graduate programme. Within the two years of the graduate studies, the translation program offers a wide variety of courses that cover many different aspects of the translation profession, including translation theory in general, the translation of scientific and academic texts, the translation of EU-related documents, machine translation and post-editing, localisation, and other topics and methods related to the field. The Areas of the Translation Profession course is a mandatory course in the third semester of the translation program and it introduces students to two significant areas of the translation profession, audiovisual translation and literary translation. Students are familiarized with the professional norms, practices and strategies, tailored to different and specific contexts and situations. Given the situation on the Croatian market, AVT training is mainly focused on the practice of subtitling, which students are introduced to gradually and through various types of assignments, applying the rules and norms of professional audiovisual translation practices. Through weekly subtitling assignments, the students are required to translate texts of various genres and for different contexts, also gaining insight into the fields of transcription, voice-over, and templates. In addition to the correction, feedback and a collective overview of the students' assignments, the practical section of the class provides an opportunity for a lecture on the theoretical aspects of the subtitling practice as well. The overall objectives of the course include familiarizing the students with audiovisual and literary translation, the principal professional norms and practices on the Croatian market and the essential skills to work in those two areas of the translation profession.

[15] https://anglist.ffzg.unizg.hr/?p=19058&lang=en accessed on 14 January 2022

6. Aims and hypotheses

The main aims of this study are to assess and compare the educational potential of professional cloud-based and free desktop-based subtitling software, to determine whether the software solutions offer significantly different didactic possibilities and to potentially provide companies and websites with valuable feedback to improve their software.

Two main hypotheses have been established based on these aims:

- Professional cloud-based systems, here exemplified by OOONA, are more useful in subtitling education at university level with regard to the current translation market than free desktop-based systems, with a higher educational potential.

- The OOONA tools the students were provided with as part of the software were sufficient for their needs at this level of education.

7. Methodology

The data were collected through a questionnaire created in Google Forms and distributed to students of the translation track of the graduate programme at the Department of English Language and Literature at the Faculty of Humanities and Social Sciences at the University of Zagreb, who attended the Areas of the Translation Profession course (see Section 5 for details) divided into three groups with two different teachers in the third semester of their graduate studies, in the academic year 2020/21. The questionnaire was distributed via direct message over social media and it was completed in July 2021. Both the questionnaire and the replies were in English. It was designed specifically for students who either used a free desktop-based or a professional cloud-based subtitling platform in the course. This is why the sample included in the study was quite small and restricted, not allowing for useful statistical analysis results. The sample is asymmetrical, with 18 students who used free desktop-based software, including Subtitle Workshop, Subtitle Edit and Aegisub, and seven students who used OOONA EDU, the cloud-based subtitling software included in the research. The important distinction in the sample and in the study is between free (desktop-based) and professional (cloud-based) software. However, further in the Results section, the free desktop-based group and the professional cloud-based group will be referred to as "the desktop-based group" (DB) and "the cloud-based group" (CB) respectively in order to simplify the presentation.

The questionnaire consisted of closed-ended questions, including dichotomous, multiple-choice, Likert-scale and matrix questions, as well as open-ended questions which allowed the students to elaborate on their opinions and experiences with the software solutions. The first section of the questionnaire mostly consisted of demographic questions regarding the students' personal information and education. The last question in the section then divided the students into two sub-sections depending on the type of software they had used in the course. Both the desktop-based and cloud-based sections contained a question regarding the general satisfaction with the software. The impact of intervening variables was assessed through questions regarding the installation process, the Internet connection and the PC operating system. The key part of the questionnaire was a matrix question consisting of multiple Likert scales regarding the perceived development of specific skills required for subtitling after taking the aforementioned course, including spotting, working with shot changes, reading speed, dialogue reduction, working with a waveform, templates, as well as reviewing translations and providing feedback. The dependent variable in this study, the usefulness, namely the educational potential

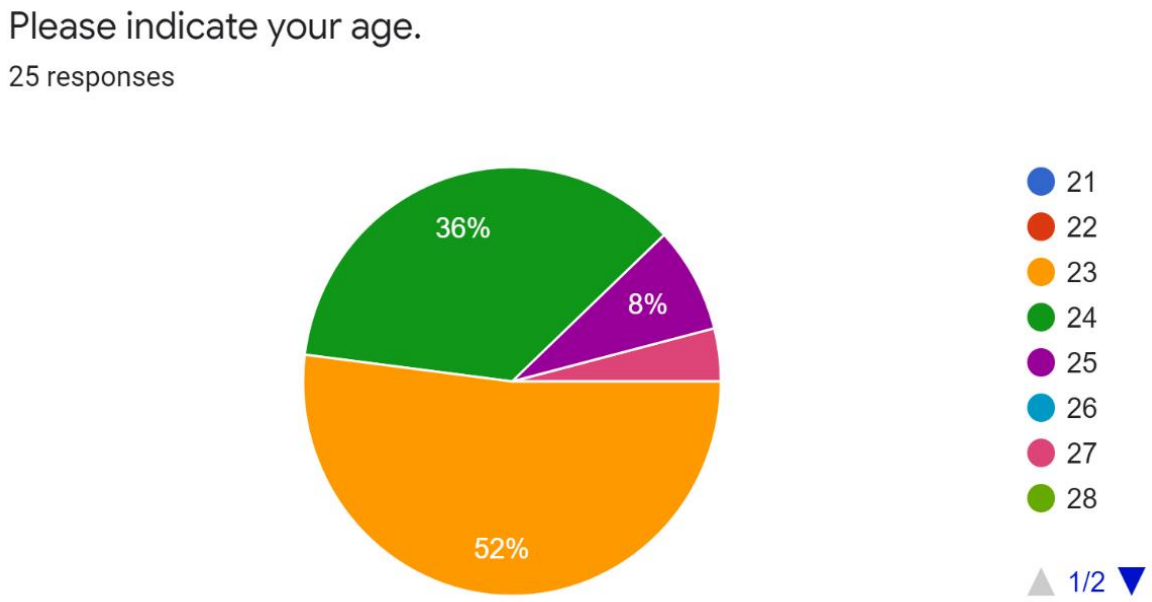
of desktop and cloud-based subtitling systems, was operationalized using the specific skills required for subtitling that the students had to acquire during the course. The data was analysed quantitatively and qualitatively and the results are shown and discussed below.

8. Results

This section of the thesis will contain a mostly descriptive analysis of the results of the questionnaire. The questionnaire was completed by 25 respondents in total, with 18 students in the desktop-based software group and seven students in the cloud-based software group. More than half of the respondents (13) were 23 years old at the time of the questionnaire. The range of the age responses is four, while the median and the mode both equal 23 (Fig. 14). Since the difference in the number of participants belonging to the two groups is numerically incomparable, the results of the separate groups will have to be expressed in the number of respondents (absolute frequency) rather than a percentage (relative frequency). Percentages could prove to be markedly misleading in this case.

Figure 14.

The Age Distribution of the Respondents



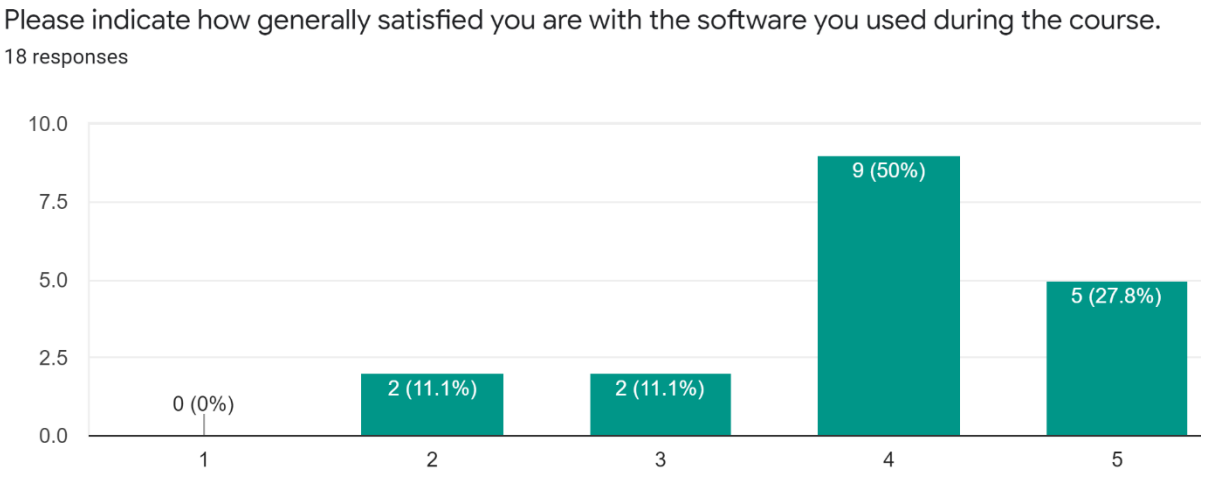
Source: the questionnaire

The first question in the separate groups of the questionnaire examined the satisfaction each of the groups of students felt with the type of software they used. They were required to indicate their satisfaction on a scale of 1 to 5, with 1 being “Not satisfied” and 5 being “Very satisfied”. Apparently, not a single student was completely dissatisfied with the software used in the course. In the desktop-based group, only two were moderately dissatisfied as well as neutral (Fig. 15). Exactly half of the students, nine of them, claimed to be fairly satisfied with desktop-

based software, while five of them were completely satisfied. Although the most common answer in both groups was 4 (fairly satisfied), with five students from the cloud-based group also choosing that option, the second group had no marks lower than 4. Even though the sample is considerably smaller and concerns only the use of OOONA, all of the respondents were at least quite satisfied with the software (Fig. 16).

Figure 15.

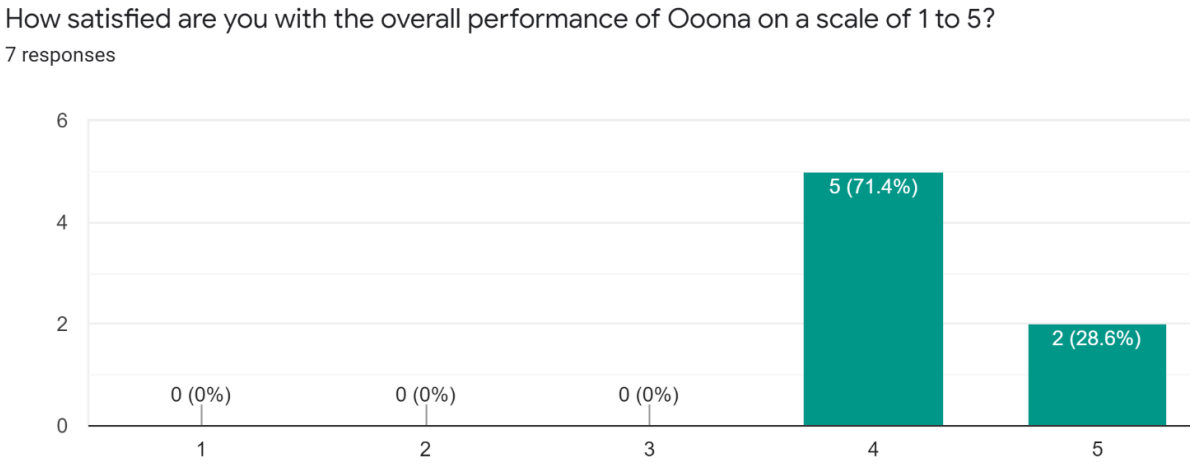
Question 1 Regarding the General Satisfaction with the Desktop-Based Software



Source: the questionnaire

Figure 16.

Question 1 Regarding the General Satisfaction with the Cloud-Based Software (OOONA)



Source: the questionnaire

Possible interfering variables were also taken into account to determine all the factors that could have affected the students' satisfaction with the overall software solutions, as well as the acquirement of their skills. The interfering variables included possible issues with the installation of the desktop-based software, the operating system the two groups worked in, possible issues with the Internet connection, as well as with the installation of the OOONA Agent, which has since then been made virtually available and does not have to be installed on the device any longer. Of the 18 respondents who used desktop-based software, 14 encountered no issues with the installation of the application on their devices. One respondent noted having to install new drivers and the VLC media player. As for the operating system, 24 respondents used Windows, while only two respondents used the Mac operating system with one person indicating using both. All of the respondents in the cloud-based software group used Windows during the course. Almost a third of all the respondents in the entire sample faced issues with their Internet connection which may have contributed to their general satisfaction response, primarily in the cloud-based group. All of the respondents who used cloud-based software installed the OOONA Agent with no accompanying issues.

One of the main questions posed to the students required them to gauge to which level they had acquired specific skills necessary for the practice of subtitling. The skills included spotting subtitles and working with timecodes, working with a waveform, adjusting and respecting the reading speed, as well as understanding its significance for the audience, using templates, reviewing the work of other translators and providing feedback, converting subtitle files into various formats, creating burnt-in subtitles or hard-coding them onto the video, working with and adjusting shot changes, adapting and reducing the original dialogue and general translation skills. When the skills are compared individually between the two groups, only some of them present a substantial difference (Fig. 21).

The majority of respondents (13 in DB and all 7 in CB) claim to have mastered spotting subtitles and working with timecodes to a great extent or completely. The difference between the mean value for the two groups is not substantially different, with 4 for the desktop-based respondents and 4.6 for the cloud-based group. All of the respondents indicated acquiring this skill at least slightly or moderately.

According to the responses, a third of the desktop-based group did not get the chance to learn how to use a waveform in the practice of subtitling at all, while five have completely. All seven of the respondents in the cloud-based sample acquired the skill to some extent, with five of

them mastering it to the greatest extent. This is one of the skills for which the mean values exhibited one of the major differences between the two groups (DB = 2.9; CB = 4.6).

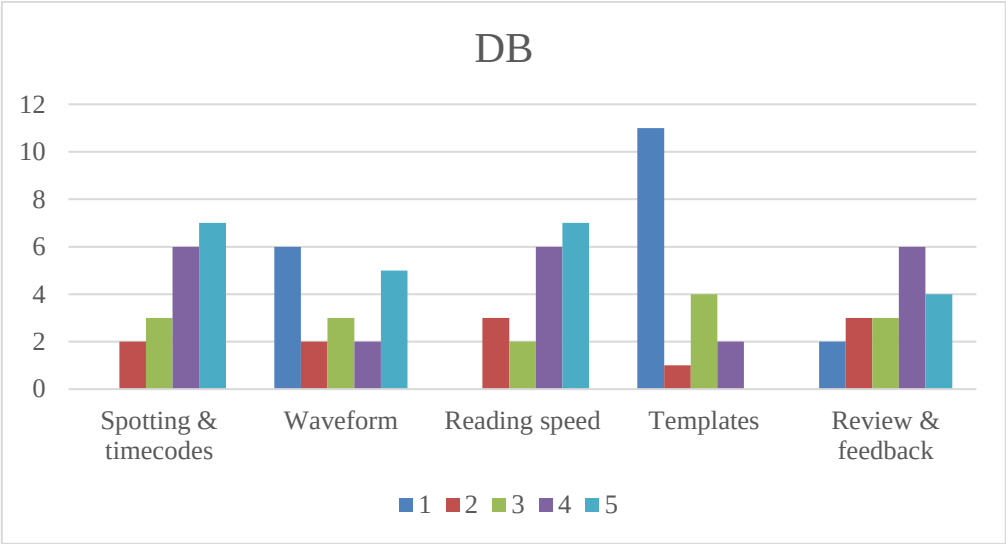
The mean values for the skill of adjusting the reading speed and understanding its significance for the audience proved to be fairly similar. All of the students acquired this skill to some extent, with 12 respondents (48%) in the entire sample choosing the highest mark.

As is visible in Figures 17 and 18, using templates and adjusting them if necessary elicited substantially different responses among the two groups of students. Eleven students that used desktop-based software did not acquire the skill even to the slightest extent and none of them chose the highest option. Interestingly, the two most numerous choices in this group were number 1 and number 3, which corresponded to moderately mastering the skill. The mean value for this skill in the desktop-based sample is 1.8. The cloud-based group's choices were, once again, limited to marks 4 and 5, indicating "to a great extent" and "to the greatest possible extent", respectively. The mean value of the second group's skill assessment amounts to 4.1.

The responses for the skill titled "Reviewing colleagues' work and providing feedback" elicited mixed responses in both groups. The range of responses most probably depended both on the features available in the individual software solutions, but also on the aspects the teachers decided to focus on in their respective groups. Neither the difference between the mean values nor the distribution of the responses, which is visualised in the clustered column charts in Figures 17 and 18, indicated an important difference in skill development. The most numerous response in the desktop-based sample is "to a great extent" (6), while it is "to the greatest possible extent" (3) in the cloud-based sample. Only the desktop-based responses contain the two lowest marks, indicating that two people felt like they had not developed the skill in the slightest.

Figure 17.

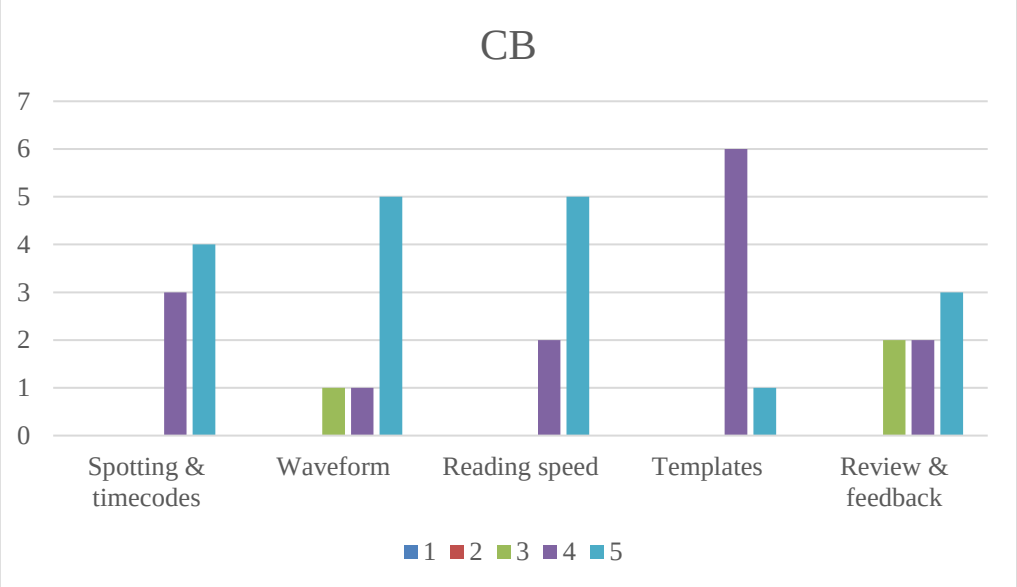
The Marks for the First Five Skills of the DB Group



Source: the questionnaire

Figure 18.

The Marks for the First Five Skills of the CB Group



Source: the questionnaire

When it comes to the skill of converting video and subtitle file formats, the responses in the desktop-based sample vary greatly. The middle values are equal with extremes on both sides

of the spectrum, which results in the mean value of exactly 3. With the mean value of the cloud-based sample for this skill amounting to 4.4, the difference is not major, although the highest mark is by far the most numerous in this sample.

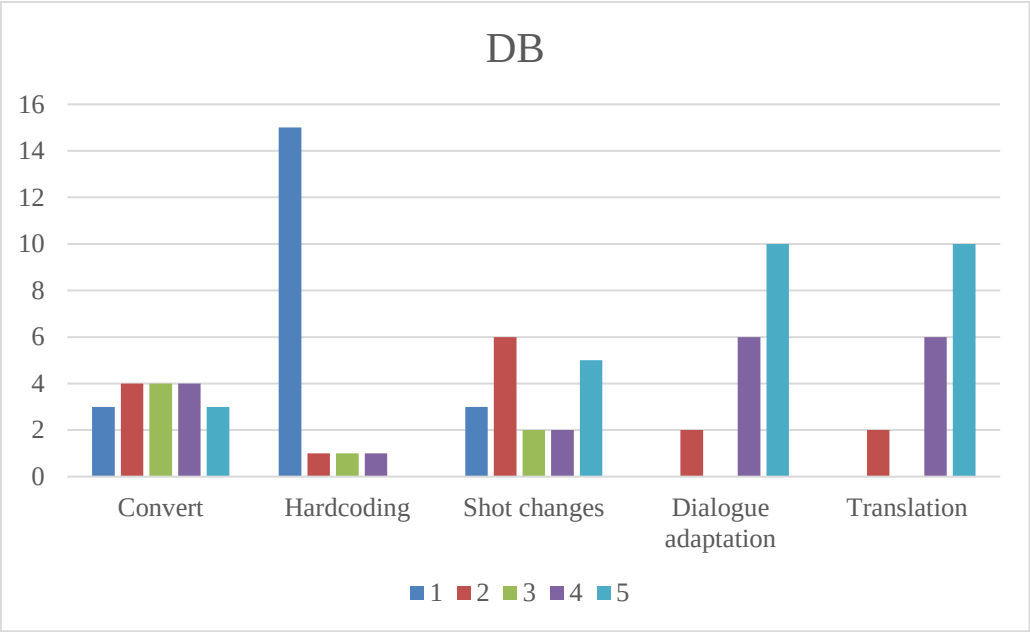
Hardcoding or creating burnt-in subtitles is one of the skills with the biggest differences between the two groups of students, amounting to a mean value of 1.3 in the desktop-based and 3.9 in the cloud-based group. Fifteen students in the desktop-based group did not develop that skill at all, while there was one response for every other option. Although the tool for creating burnt-in subtitles was available within the OOONA Toolkit, their mean value was not much higher, at 3.9.

Taking into account the different market standards, the guidelines of various vendors and some of the golden rules of subtitling, working with shot changes is one of the most important aspects of subtitling today. The mean values, which equal 3 in the desktop-based group and 5 in the cloud-based one exemplify quite a pronounced difference, which is also reflected in the visual representation of the individual results in the charts (Figures 19 and 20). The responses in the desktop-based group are fairly equally distributed, with the most numerous choices being 2 (“only slightly”) and 5 (“to the greatest possible extent”). All of the respondents in the cloud-based sample, on the other hand, are of the opinion that they have managed to grasp the concept of shot changes and the rules surrounding them to the greatest possible extent.

Lastly, dialogue adaptation and reduction, as well as the more general linguistic skill of translation and language transfer elicited the same number and distribution of responses in both groups. The difference between the mean values is equal with 4.3 in the desktop-based sample and 4.6 in the cloud-based sample for both skillsets. The distinction is minor, indicating that the skills are acquired to a very similar degree regardless of the type of software. The most numerous responses in both groups were marks 4 and 5, even though two students in the desktop-based sample indicated developing these skills only slightly by choosing number 2.

Figure 19.

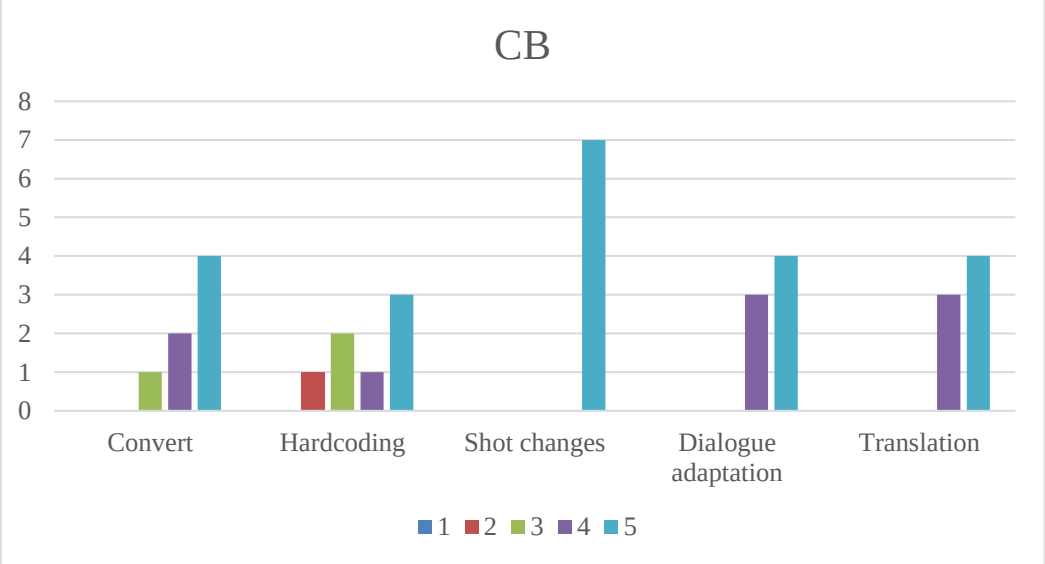
The Marks for the Second Five Skills of the DB Group



Source: the questionnaire

Figure 20.

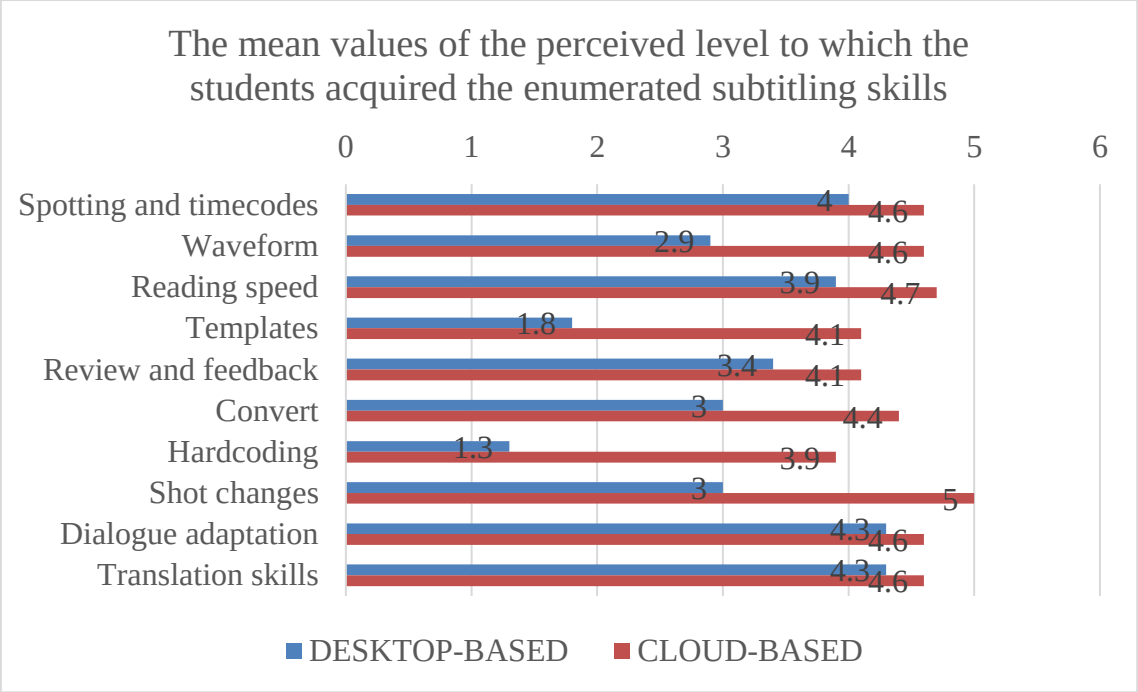
The Marks for the Second Five Skills of the CB Group



Source: the questionnaire

Figure 21.

The Mean Values of the Perceived Level to which the Students Acquired the Given Subtitling Skills

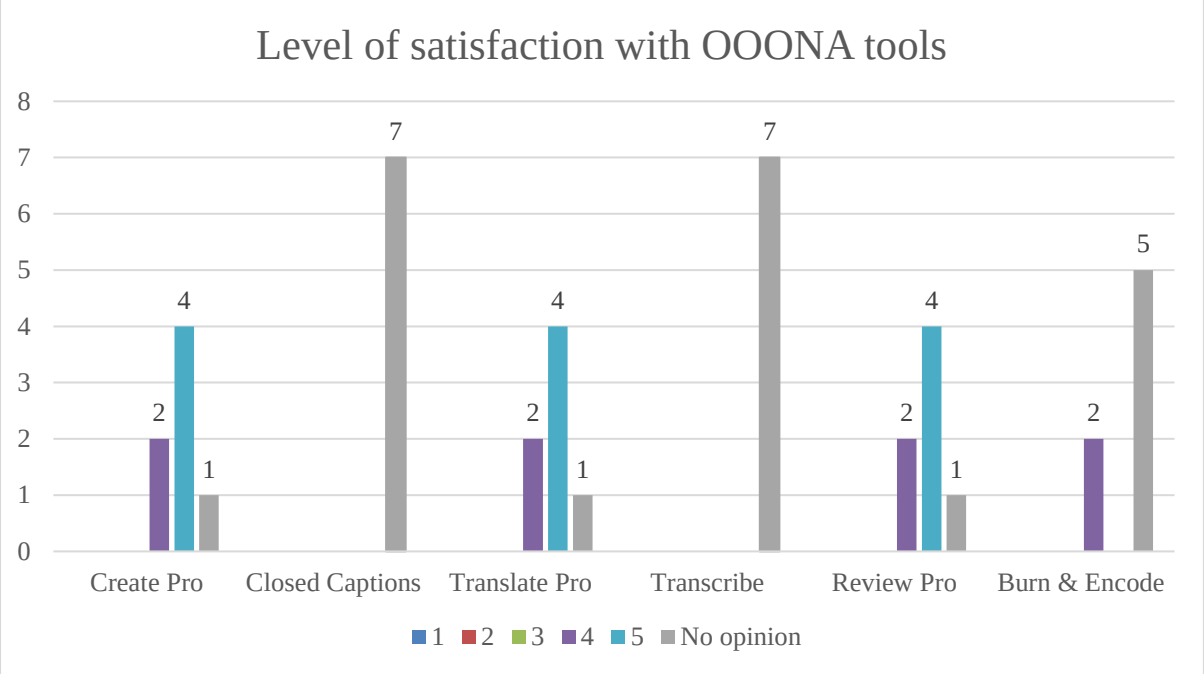


Source: the questionnaire

Following the section on skill development, the cloud-based group was asked a few questions specific for OOONA EDU. The respondents in the cloud-based group were asked to indicate their level of satisfaction with each of the tools that were offered in the OOONA EDU package they used in the course. As can be seen in Figure 22, two of the features, Closed Captions and Transcribe, were not used at all by any of the students. The three features which were used the most; Create Pro, Translate Pro and Review Pro all elicited the same number of responses for the same marks, with the most common mark in each category, with four responses, being number 4, indicating “satisfied”. Since the option for “no opinion” was chosen once in each of those categories, two of the students most probably used exclusively Create Pro instead of Translate Pro or vice versa, while the respondent who had no opinion on the Review Pro tool most likely did not use it in providing feedback on their colleagues’ work. Burn & Encode was the only feature that received mixed and mediocre responses, with five students having no opinion about the tool and two of them indicating that they were satisfied.

Figure 22.

The Level of Satisfaction with the OOONA Tools Offered in the OOONA EDU Package



Source: the questionnaire

More than half of the respondents (4) from the cloud-based group used the Create Pro feature most often (57.1%), while the others (3) mostly used Translate Pro (42.9%).

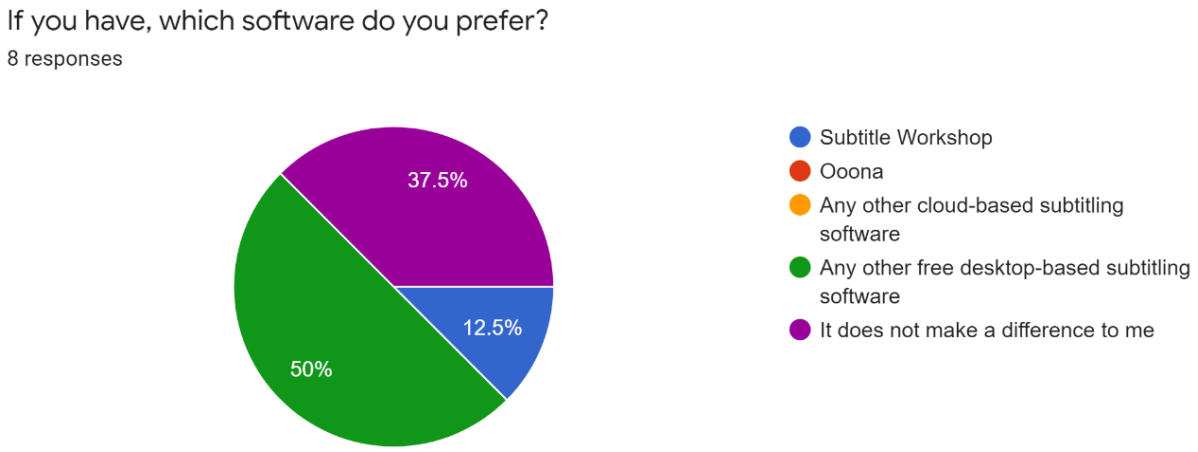
Upon finishing the main part of the questionnaire regarding the skills and the satisfaction, a couple of concluding questions were posed to both of the groups. When asked whether they would consider buying a license for OOONA upon finishing the course and beginning their professional career, nearly all of the students (6) who used OOONA in their subtitling education responded positively, while one of the students opted for “Maybe”. The available responses included “Yes”, “No” and “Maybe”.

One of the concluding questions that was posed in both of the groups asked the students to indicate whether they ever used the other type of software – either cloud-based software in the desktop-based group or desktop-based software in the cloud-based group. None of the students who used desktop-based software in their subtitling education have ever tried using cloud-based subtitling software. On the other hand, four of the students in the cloud-based sample, more than half of them, have used desktop-based software before. When asked which software they preferred if they did have experience with both, four of the desktop-based sample that

responded to this question prefer any other desktop-based software solution other than Subtitle Workshop, one student prefers Subtitle Workshop, while three students indicated indifference. It is important to note here that, even though none of the students in the desktop-based sample had experience with cloud-based software, eight of them still responded to this question in the questionnaire. In the cloud-based sample all six respondents who have used both types of software before prefer the cloud-based software OOONA to other subtitling software solutions.

Figure 25.

Question Regarding Software Preference if Both Types Were Used (Desktop-Based Group)



Source: the questionnaire

8.1. Open-ended questions

The questionnaires in both groups were concluded with an open-ended question focused on the opinions of the students, allowing them to elaborate on any aspects of the software that were not focused on in the main body of the questionnaire. The students were asked to elaborate on their answers two times in both groups, once following the question of software preference and the second time at the very end of the questionnaire, regarding their general opinions and further comments. No open-ended question strictly required an answer. The fact that almost all of the students answered these questions indicates their interest and eagerness to expound upon their opinions and conclude the questionnaire on a more personal note.

There are 23 longer answers in total, with 16 of them in the final question regarding further comments. Both questions in their own ways regard the positive and negative aspects of the free desktop-based applications this group used in their sessions. According to the contents and sentiments, the replies have been divided into seven main categories, Negative and Positive

Subtitle Workshop, Negative and Positive Subtitle Edit, Negative and Positive Aegisub and Neutral. Some of the replies were attributed to more than one category if they contained variable opinions. Taking into account the overall greater number of respondents in the desktop-based group and the different software solutions they used within the same group, it was to be expected that the responses would be more versatile and varied.

8.1.1. Negative Subtitle Workshop

In the Negative Subtitle Workshop category, the replies mainly focused on the interface, reliability, issues with opening video files and general installation issues. Most of the respondents focused on the unreliable nature of this software, prompted by the constant saving necessary in order not to lose progress, even with the auto-save feature enabled, as well as some other "unresolvable issues". One respondent phrased this complaint as having developed a "habit of obsessively pressing the Save button", which also prolonged the subtitling process. The interface was at one point simply referred to as "bad", with other opinions lining up with that description, admitting that it is difficult to use, not user-friendly, counterintuitive and frustrating. Concerning the interface, many of the respondents indicated the lack of a waveform as a hindrance making their subtitling process slower, with one of the respondents referring to subtitling without a waveform as "messy". Other noticeable recurring complaints in the replies included issues with notifications and errors popping up or persisting when they should not have or not showing up when they should, as well as technical issues relating to the download or installation of the software and issues upon reading or playing the video files, despite having installed various codecs. Many of the responses were comparisons between Subtitle Workshop and Subtitle Edit, in cases where students attempted to use Subtitle Workshop, but switched to Subtitle Edit after a certain period of time. Interestingly, a student emphasized that neither software was adapted for visually impaired students, with smaller fonts and without the option to make changes to the user interface.

The following is a representative response that refers to most of the abovementioned issues:

> *Subtitle Workshop was **difficult to use** and **unreliable**. Before using it, I have not had any experience working with subtitling software, so that did not help, but it was **difficult to learn how to manage timecodes** and the interface was overall quite **counterintuitive**. I also **had to save the subtitle file after every few changes** because **the software would often crash** and I would **lose the work** I had done.*

8.1.2. Positive Subtitle Workshop

Six responses contained positive opinions about Subtitle Workshop, which, surprisingly, also focused mainly on the interface, shortcuts and the installation. Either in comparison with Aegisub or on its own, students emphasized how intuitive and simple Subtitle Workshop is to use. In great contrast to the previous section, the respondents deemed it easy and useful for beginners, with keyboard shortcuts largely facilitating the subtitling process. The system was once referred to as user-friendly and causing no installation problems. Many of the responses in this category belonged to the previous one as well, with students finding both pros and cons in the Subtitle Workshop software. To conclude, the respondents exhibited greatly varying opinions about Subtitle Workshop, with more of them gravitating towards the negative aspects than the positive and many of them being in contradiction.

8.1.3. Negative Subtitle Edit

Only one response was attributed to the Negative Subtitle Edit category. The response contained a comparison of Subtitle Workshop and Subtitle Edit and highlighted certain pros and cons of both of those software solutions. The student criticised the waveform for not being precise enough to be of much use in the process of subtitling as well as the interface for not being adapted to accommodate visually impaired students.

8.1.4. Positive Subtitle Edit

The Positive Subtitle Edit is a more numerous category, containing opinions on the interface, the waveform and the shortcuts. As mentioned above in the Negative Subtitle Workshop category, many of the responses in this group refer to the comparisons made by students following their switch from Subtitle Workshop to Subtitle Edit. The pros are therefore often aspects that Subtitle Workshop lacks or functions that are counterintuitive or difficult to use in contrast to Subtitle Edit. Many of the respondents emphasized the importance and benefits of subtitling with the help of a waveform which is offered in Subtitle Edit, but not in Subtitle Workshop. Subtitle Edit has been described as user-friendly, especially visually, easy to use and intuitive, prompting one of the respondents to claim that “after a whole semester of working with Subtitle Edit, I felt as if I truly ‘mastered’ the art of making subtitles”. The shortcuts made subtitling much quicker and easier and the software did not seem to cause any issues.

8.1.5. Negative Aegisub and Positive Aegisub

The categories containing the negative and positive opinions on Aegisub consist of two and one response respectively, which is to be expected since very few students used or tried to use this software. The complaints are relatively general and quite nonspecific, indicating that Aegisub is less user-friendly than Subtitle Workshop and that the interface has not been updated in a long time:

> *It was mainly alright and I did not have many problems with it, but the latest version has not been updated since circa 2014/15. I could tell that the user interface was not up to par with that of my colleagues who used Subtitle Workshop on their Windows OS.*

On the other hand, Aegisub did not seem to cause many issues and the software was easy to use, which was amplified by the presence of a waveform.

8.1.6. Neutral

One response could not be attributed to any of the aforementioned categories, requiring its own "Neutral" designation. The respondent[16] opted for a diplomatic approach and conclusion, finding pros and cons in both the Subtitle Workshop and Subtitle Edit software solutions and following up with a personal comment on the adaptability of future translators: "Both software have advantages and disadvantages, there is no perfect software. Also, I think that translators should be flexible and know how to use both."

8.1.7. OOONA

Respondents in the cloud-based group left seven longer responses in total, illustrating their opinions on the professional cloud-based subtitling platform. The responses mainly focused on six broader topics – accessibility, the Review feature & annotation, the interface, shot changes, company responsiveness and overall usage. Only one comment was negative in nature and it referred to problems a user encountered related to shot-change detection, mostly in contexts where scenes in a video file were set in the dark, making it difficult for the software to recognise cuts. This is, however, not strictly related to this specific software as it poses a problem to subtitling software in general. The most commonly referred to positive aspect was the ease of

[16] This was a response to the question on software preference. In the final open-ended question of the questionnaire, this respondent also indicated certain negative and positive aspects of Subtitle Workshop and Subtitle Edit that were included in the qualitative analysis.

access enabled by the cloud-platform, allowing students to work and subtitle on multiple devices. Apart from preferring the OOONA interface to certain free desktop-based software solutions, the respondents appreciated the black theme OOONA made available, making it visually more comfortable for some people, as well as how easy the intuitive interface made learning to use the various tools offered by the developers. Two respondents emphasized the degree to which the Review feature helped them provide feedback on their colleagues' subtitles, as well as annotate their own. Alongside the comment indicating the issue regarding shot-change detection, another respondent expressed great satisfaction with the software's functionality of creating and adding them onto the video files, "The OOONA Agent is a God-given piece of software when it comes to creating shot changes. Life-saving sometimes!" Another important aspect of the platform and its developers, which was highlighted in a single longer response, is their quickness to respond to queries from the users, indicating their openness to feedback, improvement and readiness to help. Lastly, regarding the overall usage, the students found the platform easy to use, interesting and even entertaining.

9. Discussion

The asymmetricity of the sample has certainly been a limitation of the study, with only third of the students taking the course using the temporary license for the OOONA EDU PRO package. It is crucial to keep in mind that all of the ratings and responses were based on the respondents' subjective assessment of the skills, features and software solutions. The conclusion will, therefore, also be based on the students' experiences, not objective facts, while some of the insights, notes and comments are given and reached by the author, who was originally part of the cloud-based group of students.

It has been established that all respondents in both groups are at least slightly satisfied with the software they used, with the mean value in the desktop-based group amounting to 3.9 and 4.3 in the cloud-based group. The mean value of the desktop-based group reflects the range of opinions and responses that span both extremes in that group due to the use of different or multiple software solutions and various interfering variables.

Almost a third of all the respondents in the entire sample had issues with their Internet connection which may have contributed to their general satisfaction response, primarily in the cloud-based group. This is largely due to the fact that OOONA in this specific case and cloud solutions in general necessitate an uninterrupted and durable Internet connection. Therefore, the launch of the programme, as well as the speed at which the different tools work mostly depend on that factor. As one of the main requirements for OOONA to function, if the connection falters, the programme may crash, but the built-in auto-save feature makes sure the work of the user is not lost, with the system also prompting them to download their project in case of an unstable connection. Upon examining the potential influence of reported issues with the Internet connection on the satisfaction of the desktop-based group, the responses showed no visible link, with respondents who did have a problematic connection indicating a high-level of satisfaction with the system they used. Considering that two of the respondents who had problems with their connection in the cloud-based group chose a lower mark (4), it might have influenced the satisfaction response in their group. On the other hand, three other students who chose the lower mark 4 not having problems with the Internet connection.

From the answers obtained in the questionnaire, almost no connection has been established between the least and most satisfied results with the desktop-based software. The included responses all vary greatly, with a single factor that may form a pattern in the sample – all the lowest responses (mark 2) used Subtitle Workshop in the course, while the highest marks (mark

5) have either only used Subtitle Edit or replaced Subtitle Workshop with Subtitle Edit. It did not make sense to search for such a connection in the cloud-based group because all respondents were at least very satisfied with the software and they all used the same software solution, as opposed to the desktop-based group whose subtitle editors differed.

Although the installation of the OOONA Agent that was, at the time, necessary for the creation of the waveform, shot-change detection and hard-coding in the PRO versions of the OOONA tools might have posed an additional effort or even a nuisance, as well as a potential problem, making OOONA only partly a cloud-based software, none of the students in the cloud-based group had issues with its installation and no one referenced it in a negative way in the open-ended questions. The potentially problematic process of installing the Agent was far outweighed by the advantages it provides.

Students were required to subjectively gauge the level to which they felt they had acquired certain skills related to the practice of subtitling. A more pronounced difference in the mean values between the two groups was found for five skills of the ten listed, while five exhibited small differences. It is important to note that the groups were taught by two different teachers.

The skills that were acquired to a similar degree in both groups included spotting and working with timecodes, adjusting and respecting the reading speed, reviewing the work of other translators and providing feedback, adapting and reducing the original dialogue and general translation skills. Spotting and working with timecodes constitute the basics of any subtitling practice, as well as the minimum of any course teaching subtitling, so they could only have been facilitated by certain features of the software, such as the waveform. Therefore, all of the students acquired this skill at least to a small degree. The lower scores are again mostly tied to the use of Subtitle Workshop. The same is valid for adjusting and respecting the reading speed, one of the key concepts to grasp within subtitling. It is also important to note that this skill had the highest mean value in the cloud-based group, amounting to 4.7. Dialogue adaptation and reduction, which is fairly specific for AVT, and the quite general linguistic skill of translation, which are skills that both teachers certainly focused on equally, were acquired to a very similar degree, with more varied results in the desktop-based group. These skills received the highest values in that group. They are, however, not dependent on the type of software used, whether desktop-/cloud-based or paid/free, but on the overall teaching or training method, the choice of materials, types of assignments, previous knowledge, adaptability and other factors not related to this narrower topic. Reviewing the work of other translators and providing feedback received

mixed responses. The fact that it is a skill that is not central or strictly necessary for the narrower practical task of subtitling, as well as a skill that is not purely technical or straightforward to acquire made it challenging to pinpoint the pattern or reasoning behind the marks. It is an important process in the AVT industry, either for quality control or for reviewing your own work, but it is not necessarily a crucial component of a subtitling course. In OOONA, for example, emphasis is put on this phase of the subtitling process with a tool exclusively dedicated to it, Review PRO, which allows the user to correct, comment on, annotate and provide feedback on the work of another subtitler or to check, improve and annotate one's own work. In the course, the students were faced with tasks involving exchanging translations and revising them. Ultimately, the degree to which this skill has been acquired does not in actuality seem to speak strictly to the educational potential of the different software solutions, but certain features or tools may facilitate it.

The remaining skills, working with a waveform, using templates, converting subtitle files into various formats, creating burnt-in subtitles or hardcoding them onto the video and working with and adjusting shot changes, exhibited a considerable difference in their mean values.

With both extremes present to a large extent in the desktop-based sample, the skill of working with a waveform seems to have been dependent on the specific standalone software solutions the students worked in, since some of them do not have the waveform feature available on their interface. All of the respondents who indicated acquiring the skill to a high extent used Subtitle Edit, which does have a waveform as part of its interface. All of the lowest responses came from respondents who used Subtitle Workshop, which does not provide the user with that feature. Middle-of-the-road replies mostly came from students who used Subtitle Workshop or Aegisub, as well as one student who used Subtitle Edit, but to whom the waveform did not seem precise enough. This is one of the distribution patterns that emphasize the subjectivity of the responses. The students in the cloud-based group all acquired the skill to some extent, with five out of seven respondents choosing the highest rating. Considering that they all used the same software with the same waveform functionality, as opposed to the desktop-based group, the skill must have depended on individual understanding, effort and preference. When mentioned in the open-ended responses, the waveform was referred to as a helpful feature that made subtitling faster, easier and more efficient and without which work proved long, frustrating and imprecise.

The use of templates, which is becoming increasingly demanded on the AVT market as visible from the Netflix Timed Text Resources, for example, elicited markedly differing responses in the two groups. With 11 of the 18 respondents in the desktop-based group not acquiring it at all, it was interesting to find out who did. The search for a possible explanation did not yield evident results, with students who replied with marks between 2 and 4 using all three different software solutions, with Subtitle Edit as the most common choice. It seems like the mastery of this skill largely depends on the subjective, individual usage of this feature in the respective software. The students learned how to use them if they had use for them in their work. It also depends on the focus placed on the usage of templates in the course. If it had been used by more students, the marks would also most probably visibly depend on the quality of the individual features. Similar reasoning can be applied to the results in the cloud-based sample, who learned how to use templates to a greater extent if they used the Translate PRO tool more than Create PRO. It also depends on the focus of the lectures and the assignments. It is significant to note that Subtitle Edit and Subtitle Workshop are listed in the Timed Text Tooling[17] resource on Netflix as free editors for which Netflix templates for TTML dfxp import and export have been enabled (Netflix, n.d.), which also points to the importance of understanding templates regardless of whether a subtitle editor is free/paid or desktop-/cloud-based.

Converting subtitle files into various formats is a skill that received fairly equally distributed results spanning both extremes in the desktop-based group, but also one of the few skills that received some of the lowest scores (mark 3) in the cloud-based group. While Subtitle Edit and Subtitle Workshop are equipped with a batch conversion tool, Aegisub is not, with only the possibility to create an output in many different formats. Furthermore, the OOONA package used by the cloud-based group, OOONA EDU, does not contain the Convert Pro or Convert API tools, which are part of the OOONA Tools paid package, so they also had to rely on external sources if necessary. Converting subtitle file formats can be facilitated by various software functionalities and incorporated into the editor, but it does not strictly depend on them. No link has been established between the lowest scores in the desktop-based group and the software solution they used, with all of them using either Subtitle Edit or Subtitle Workshop. The degree to which a student felt that they had acquired this skill depended on the specifications and formats they needed in relation to their individual system, general and

[17] https://partnerhelp.netflixstudios.com/hc/en-us/sections/203531948-Timed-Text-Tooling accessed on 7 February 2022.

already existing IT literacy, prior knowledge, individual preference, lecture focus and many other factors, including the students' ability to find substitute solutions if they needed to. It is not strictly a skill that is necessary in order to learn how to subtitle, but it is an accompanying technique a subtitler is expected to know in order to be able to accomplish daily tasks and overcome obstacles. Understanding the existence and need for various subtitle file formats and how to transform one into another may prove very useful in the AVT market.

Hardcoding or creating burnt-in subtitles is one of the skills with the biggest differences between the two groups of students. The mean values of 1.3 and 3.9 in the desktop- and cloud-based groups respectively indicate both a difference in the features available in the individual software solutions as well as a lighter focus that was placed on this phase of the subtitling process. Since many of the desktop-based software solutions do not have the option to create burnt-in subtitles within their application, but require another software to hardcode them onto the video, the students using those types of software solutions did not develop that skill to a large extent. Fifteen students in that group did not develop that skill at all, while there was one response for every other option. Therefore, even if the scores in this group were higher, they would not have indicated the educational potential of the software in question as much as the students' resourcefulness in finding a different solution and the quality of an additional programme for hardcoding subtitles. Although the tool for creating burnt-in subtitles was available within the OOONA Toolkit, which is why none of the students chose the lowest mark for the skill and three of them indicated mastering it to the greatest extent, their mean value was not much higher, at 3.9, mainly due to the fact that the focus in the course was largely on the central phases of the subtitling process and there was not really a need for hardcoding the subtitles except as practice. Even though the cloud-based group were only required to create burnt-in subtitles once during the course, unless a student wanted to do so personally, three students indicated mastering the skill. Keeping in mind that hardcoding was not strictly required or necessary in the course, the cloud-based group carried it out once as practice within an exercise that consisted of subtitling a documentary of their choice, hardcoding the subtitles onto the video and, ultimately, attempting to create a voice-over. In a classroom or course setting, hardcoding the subtitles provides the students with the opportunity to create a concrete result that they can share or come back to.

Working with and adjusting shot changes is a skill that is becoming increasingly important in the subtitling market, facilitated by software functionalities and new and improving subtitling programmes, but one that also might be difficult to master depending on the material a student

or subtitler is working with. One of the golden rules of subtitling indicates that a subtitle should not cross a shot change, but should rather finish before one and start on a shot change. This is based on eye movement studies which indicate that viewers tend to re-read subtitles if they cross a shot change, believing that the text has changed along with the visual scene (Díaz-Cintas and Remael, 2014, p. 91). Professionals tend to disagree concerning the details of this practice, but the basic concept is always the same. Newer audiovisual productions are often characterized by more complicated and visually challenging editing with sound bridges or characters speaking over scene cuts, which makes it very difficult to adhere to this rule (Díaz-Cintas and Remael, 2014, p. 91). Although some of the issues and specific challenges may make spotting and respecting shot changes an ordeal, newer subtitling software often contains automatic shot detection functionalities, which greatly facilitate mastering this skill. Regarding the software solutions included in this study, Subtitle Workshop is the only one that contains no feature that helps identify shot changes. Subtitle Edit and Aegisub require a short additional setup. In order to make automatic shot-change detection, waveform generation and hardcoding possible in OOONA, the user had to install the OOONA Agent. The difference between the mean values is quite pronounced, amounting to 2, with the value 3 in the desktop-based and 5 in the cloud-based sample. It is interesting to see that all the respondents in the cloud-based group consider to have mastered this skill with the help of the software they used. This response distribution largely depends on the way shot-change detection is incorporated into the software and whether the software supports it at all. Most of the desktop-based applications included in this study do offer the shot-change detection feature, but require additional setup to become available, while Subtitle Workshop does not offer that feature at all. By carrying out the installation of the OOONA Agent or using it virtually, on the other hand, the cloud-based subtitling software also offers both the waveform and shot-change detection features. The OOONA system makes it easy to clip the subtitle to the shot changes within the appropriate range. A great focus is placed on shot changes in the OOONA interface with yellow lines indicating the cuts, red lines along with the number of frames indicating the distance of the cue-in or cue-out time from a shot change and yellow triangular lines indicating the adherence to the rule, either when the cue-in time is on the shot change or when the cue-out time is two frames prior to one. In Subtitle Edit the shot changes are indicated by white lines over a green waveform and the start and the end of the subtitle are snapped to the shot-change line when it is dragged near it. Even though the cuts can be imprecisely detected and missing, it is easy to add them by a right-click option. The interface of Aegisub indicates shot changes, or "keyframes" in purple and the cue-in and cue-out times as red and blue respectively. It offers

the option to “Set start and end of subtitles to the keyframes around current video frame”, which leaves no room between the cue-out time and the shot change. Keyframes indicate a point where the image markedly changes and they are most often scene changes (“A guide to timing in Aegisub,” 2011). It is advised that snapping to keyframes be done carefully with an eye out for missing keyframes, which have to be worked around manually (“A guide to timing in Aegisub,” 2011). There does not seem to be an option for adding shot changes as in Subtitle Edit. The degree to which the students mastered this skill certainly also depended on the focus the teacher put on shot changes, the material they worked on and the guidelines they chose to follow. The distribution of results does not indicate a possible link between the marks given by the students and the software they used in the desktop-based group. The three lowest marks (mark 1) are mixed between Subtitle Workshop and Subtitle Edit, while overall most of the lowest marks (marks 1-3), of which there are 11, used Subtitle Workshop with some of them switching to Aegisub or Subtitle Edit. The responses in that group are quite mixed and subjective. The only relatively consistent link is that the students who used Subtitle Workshop opted for lower scores, which is understandable due to it lacking the feature. The higher marks, 4 and 5, were mostly focused on Subtitle Edit. Interestingly, none of the respondents in the desktop-based group referred specifically to shot changes in the open-ended questions, while it was mentioned twice in the cloud-based group, once negatively and once positively. Since numerous respondents in the former group mentioned the waveform, with one of them emphasizing its imprecision, it is possible that they were referring to the waveform section of the interface, including the shot changes. In that way, it would make more sense that they found the shot-change detection “imprecise”, rather than the visual representation of the audio track. As mentioned above, the waveform was referred to as helpful and facilitating, as well as imprecise. The cloud-based group referred to the shot changes directly, possibly because of the emphasis placed on them in the lectures, as well as the software interface. The OOONA Agent was praised for the role it plays in the automatic detection of shot changes, but one of the students also expressed an issue with shot-change detection in scenes set in the dark.

Although some skills may not directly reflect or speak to the educational potential of various software solutions, the fact that students did acquire the skill in question owing to a feature within a specific software may also, on the other hand, strengthen its potential. Some skills, regardless of their centrality in the subtitling process, depend on many different external factors, one of which is always, at least indirectly, the software the students learn in.

It might be important to emphasize a specific aspect of the open-ended responses, even though they have previously been presented in more detail. In the open-ended questions, the respondents exhibited greatly varying opinions about Subtitle Workshop, with more of them gravitating towards the negative aspects than the positive, and many of them being in contradiction. Some open-ended responses were vague and only pointed to a negative user experience with Subtitle Workshop. Contradiction is visible in two aspects of the software, the interface and the keyboard shortcuts. While only a few respondents found the interface to be easy to use, intuitive and beginner-friendly, most of the other responses characterized it as difficult to use, confusing and counterintuitive. As for the keyboard shortcuts, their existence is mentioned once as a positive aspect of Subtitle Workshop, while one other respondent observed that some of them did not always work as intended. Due to the nature of these aspects, the responses do not have any connection with possible interfering variables and are purely a result of individual preferences and experience with other worse or better software solutions.

The two final questions that are going to be discussed are software preference and the interest in subtitling. Prior to being asked which software they preferred (Subtitle Workshop / OOONA / Any other CB software / Any other DB software / It does not make a difference to me), the students in both groups were required to indicate whether or not they had ever used the other type of software. Taking this into account, only one half of the cloud-based group could indicate their preference with certainty having tried both. Although none of the respondents in the desktop-based group had experience with cloud-based software, 8 of the 18 still responded to the question. Six students in the cloud-based group, four of whom have used both types, prefer OOONA to other software solutions. Since none of the desktop-based students used cloud-based solutions, the response distribution was to be expected. Half of the students in the desktop-based sample who replied to this question prefer any desktop-based solution other than Subtitle Workshop, due to the overall negative experience the students had with that software. Only one student, who has either had a good or passable experience with Subtitle Workshop or had just not tried other solutions, prefers Subtitle Workshop. More than a third of the desktop-based group does not have a software preference.

Only two respondents in the desktop-based group indicated that they had not become more interested in the practice of subtitling upon the completion of the course. Both of those students only used Subtitle Workshop in their work, without switching to another software solution and they both had issues with the installation. Although the other variables did not correlate, with only one of them having Internet issues and having very different and variable marks for their

skills, they both had an overall negative experience with a single software solution, Subtitle Workshop. Everyone else was either positively interested in the practice of subtitling or replied with “Maybe”.

This topic acts as a useful segue into a short comparison with some of the results from Bolaños-García-Escribano’s doctoral dissertation on cloud technologies in the teaching of audiovisual translation, where he concluded that the better understanding about the practice of subtitling and the software used the students gain, the more likely they will want to continue learning to subtitle (Bolaños-García-Escribano, 2020, p. 255). From the answers obtained through the current questionnaire and the connections with various factors, it is obvious that this conclusion is valid, with the interest of the students in the practice of subtitling going hand in hand with their satisfaction with the software they used and the level to which they acquired the various skills. Due to the fact that he did not include desktop-based software solutions in his dissertation, only the responses based on cloud software are compared. As regards OOONA, Bolaños-García-Escribano’s respondents found some difficulties when trying to learn how to use its functionalities. They mentioned difficulties finding their place in the video, which speaks to the interface of the software, they found it difficult to log into, difficult to export from and complicated to save and send files in (Bolaños-García-Escribano, 2020, p. 260-261). When asked whether they would consider using OOONA Tools in the future, the respondents expressed a positive disposition, considering that 83% replied positively, while only 13% remained doubtful (Bolaños-García-Escribano, 2020, p. 262). Even though it is difficult to compare the results due to the difference in the number of participants, six of the seven students from the current study expressed a willingness to purchase an OOONA license in the future and none of them replied negatively.

Similar to the results from the current study, the respondents in Bolaños-García-Escribano’s questionnaire found user-friendliness, ease of use, web-based nature and lean interface some of the pros of the software, which is also visible from the open-ended questions in this study. Interestingly, when analysing the problems and the cons of the OOONA software that were enumerated by his respondents, Bolaños-García-Escribano posited that the problems could have arisen either due to the tool’s deficiencies, or, on the other hand, due to the students’ lack of sufficient training (Bolaños-García-Escribano, 2020, p. 265). In the current study, the students had an entire semester to become versed in using these programmes. Therefore, with the students having had enough time to become acquainted with most of the features of the

software solutions, the problems that they ran into have a higher chance of being related to the tool's deficiencies.

The hypotheses that were set out at the beginning of this study were the following:

- Professional cloud-based systems, here exemplified by OOONA, are more useful in subtitling education at university level with regard to the current translation market than free desktop-based systems, with a higher educational potential.
- The OOONA tools the students were provided with as part of the software were sufficient for their needs at this level of education.

The second hypothesis was entirely confirmed with some of the features that OOONA offered as part of its OOONA EDU package even proving to be superfluous for the needs of the study participants at this level of university subtitling education. The main hypothesis was partially confirmed. The cloud-based system included in this study did seem to elicit much more positive responses when compared to the desktop-based system. However, the differences in the acquired skills were not that pronounced when it comes to the central, crucial subtitling phases such as spotting, working with timecodes and translating, especially upon approaching the responses individually. Even though cloud-based respondents had numerous positive aspects of OOONA to acknowledge and comment on, including the web-based nature of the system and the benefits of the cloud, those were factors that did not seem to significantly affect the development of their skills. On the other hand, some skills that made use of the key parts of the software that both the cloud- and desktop-based software solutions contained, seemed to be equally acquired by both student groups. Thus, it seems that the difference in the response distribution might have to do with the proprietary/free dichotomy and the specific features and functionalities provided as part of the system and less with the fact that a software solution is completely or partly cloud-based or desktop-based. The cloud-based nature of OOONA and similar programmes is not so much connected to the educational potential of the software, but more to logistical issues, such as the quality of working and learning from home, taking online classes, sharing materials, feedback and keeping the files saved and safe in an online environment. Therefore, the cloud and web-based nature are not directly reflected in the educational potential of the software, regarding the skills necessary for subtitling, but in certain practical, logistic considerations.

10. Conclusion

In conclusion, a relatively pronounced difference was indeed confirmed between the specific cloud-based and desktop-based software solutions included in this study. However, the focus has shifted from the cloud-/desktop-based difference to the proprietary/free dichotomy throughout the study. The analysis of the responses paints a slightly different picture than the one envisioned by the main hypothesis – the professional cloud-based system included in this study, OOONA, and some of the free desktop-based systems, primarily Subtitle Edit and, to a lesser extent, Aegisub, proved to be similarly useful in subtitling education at university level with regard to the current translation market, when operationalised and measured principally via the students' subjective assessment of their skill acquirement. Regardless of the fact that OOONA EDU offered a more systematised and approachable interface with special emphasis on specific subtitling phases and was specifically catered to students of audiovisual translation, it served almost the exact same purpose in teaching the aforementioned skills, as did Subtitle Edit. Both OOONA and Subtitle Edit also elicited negative responses, but they pale in comparison to the criticism imposed on Subtitle Workshop, for example. Considering that these differences in the response distribution had almost everything to do with some crucial features each of the free desktop-based software was lacking, such as the waveform or shot-change detection, it was almost exclusively dependent on whether the software is proprietary or free, rather than cloud- or desktop-based. Keeping in mind that the cloud is becoming increasingly important in the translation market in general, with workflows almost completely migrating to the online environment, which would make cloud-based subtitling tools educationally much better adapted to the current market situation, both the proprietary cloud-based solution and the free desktop-based programmes managed to prepare these students for the practice of subtitling to a satisfactory extent. Phrased differently, OOONA EDU would seemingly have gotten similarly positive responses even if it had been completely desktop-based, taking into account that it did require the installation of a separate Agent at the time of the questionnaire, making it partly desktop-based. That seems to be the case in this particular narrow study because the students involved in the study worked from home the entire semester due to the COVID-19 pandemic restrictions. Although not the specific topic of this study, logistically, without regard to the quality of skill development itself, the choice between free desktop-based software or acquiring licences for professional desktop-based or professional cloud-based software in the classroom would pose further issues to be considered and would result in a different conclusion. Therefore, when it comes to acquiring licences for classroom use, it would be more beneficial

to purchase licences for a cloud-based platform since professional desktop-based platforms would confine the students to using the software in that specific location, regardless of its functionalities. Taking into account the funding options and budgetary concerns, the university would apparently benefit the most from purchasing licences for a cloud-based platform such as OOONA or simply using free desktop-based software. Since this study did not compare the quality or educational potential of free and professional desktop-based software, I cannot provide further insight or reach conclusions regarding that topic. Ultimately, the choice between these types of software should depend on the level of education, the budget and the priorities of the lecturer and the course. For an introductory, less intensive course on audiovisual translation or subtitling, where the ultimate aim is not to delve too deeply and professionally into the practice of subtitling, but rather, provide an introduction into the main phases of the activity, carefully chosen free desktop-based software, such as Subtitle Edit covered in this study, may be perfectly sufficient to provide students with the tools to acquire the skills they might need. On the other hand, if a course is detailed, more specialised or taught at a higher level of study, or even a module entirely dedicated to audiovisual translation, it might be a good idea to allocate a part of the university budget to acquiring licenses for such a proprietary cloud-based educational subtitling software as OOONA. Lastly, although university education plays an important role in preparing students for the translation market, it may be the case that an employer will also offer training possibilities in order for the new employees to become acquainted with a specific software they use in their everyday work. This does not take away from the fact that it is crucial to have mastered the basic skills required for subtitling before embarking into the real-world market, but it also goes to show that the most important skill for translation in general, but audiovisual translation in particular, owing to the mercurial nature of technological advancement, is for students to be able to adapt. Therefore, while it is very beneficial to expose students to emerging and expensive technologies and processes, such as the cloud, it is even more valuable to teach them how to accept and adapt to new ones, considering that they will constantly face technological change and innovation. Cloud technologies are a relatively new area in translation, and especially translation education, so further research might come to new conclusions and provide further insights into this topic, especially keeping in mind the limitations of this study regarding sample size and asymmetricity. Nonetheless, seemingly the most important thing to be in the audiovisual translation market is flexible and adaptable, with a stable understanding of the basic skills, which can, to a certain degree, be acquired regardless of whether the subtitling software used is either free or proprietary or desktop- or cloud-based.

APPENDIX 1, Questionnaire questions

Desktop-based vs. Cloud-based subtitling tools

Dear colleagues,

thank you for taking the time to fill out this survey! The research focuses on the comparison of desktop-based and cloud-based subtitling tools on the examples of Subtitle Workshop and OOONA Tools in order to gauge whether there is a difference in their educational potential and whether they are useful in the development of the skills necessary for the practice of subtitling. The survey is completely anonymous and the results will be used for the purpose of writing a research paper. The estimated time required for filling out the survey is approximately 5 to 7 minutes. Your participation, input and experience is of great importance for the completion of this thesis and I hope you will find the questions understandable and easy to get through.

If you have any questions regarding the survey or the topic in general, feel free to reach out to me over social media or the e-mail address abekafig@gmail.com

Thank you in advance,
Andrea Bekafigo

Personal information and education

Q1. Please indicate your gender.

- Female
- Male
- Prefer not to say
- Other

Q2. Please indicate your age.

- 21
- 22
- 23
- 24
- 25
- 26

- 27
- 28
- 29
- 30

Q3. Did you use desktop-based (Subtitle Workshop) or cloud-based (OOONA Tools) subtitling software in your course?

- Desktop-based (Subtitle Workshop)
- Cloud-based (OOONA Tools)

Desktop-based free subtitling software

Q1. Please indicate how generally satisfied you are with the software you used during the course.

Not satisfied 1 2 3 4 5 Very satisfied

Q2. Did you have any issues with the installation process?

- Yes
- No
- Other

Q3. Which PC operating system did you use during the course?

Q4. Did you have any issues with your Internet connection during the course?

- Yes
- No
- Other

Q5. Please indicate the extent to which you feel you have developed the following skills required for subtitling (after taking a course at this level of education) on a scale of 1-5 (1 = not at all; 2 = only slightly; 3 = moderately; 4 = to a great extent; 5 = to the greatest possible extent).

1 2 3 4 5

Spotting and working with timecodes

Working with a waveform, if applicable

Adjusting the reading speed and understanding its significance for the audience

Subtitling with templates and fixing them if necessary (and possible)

Reviewing colleagues' work and providing feedback

Converting video and subtitle file formats

Creating burnt-in subtitles (forced narratives), if applicable

Adjusting subtitles to shot changes, adding and removing them

Adaptation and reduction of dialogue in subtitles to fit the reading speed

Developing your general translation/subtitling (linguistic skills)

Q6. Have you ever used cloud-based subtitling solutions?

- Yes
- No
- Other

Q7. If you have, which software do you prefer?

- Subtitle Workshop
- OOONA
- Any other cloud-based subtitling software
- Any other free desktop-based subtitling software
- It does not make a difference to me

Q8. Why?

Q9. Have you become more interested in the practice of subtitling upon finishing the course?

- Yes
- No

- Maybe

Q10. Please add any further comments regarding your use of Subtitle Workshop as a part of your subtitling course/module.

Cloud-based subtitling software

Q1. How satisfied are you with the overall performance of OOONA on a scale of 1 to 5?

Not satisfied 1 2 3 4 5 Very satisfied

Q2. Which PC operating system did you use during the course?

Q3. Did you have any issues with your Internet connection during the course?

- Yes
- No
- Other

Q4. Did you have any issues with the installation of the OOONA Agent?

- Yes
- No
- Other

Q5. Please indicate the extent to which you feel you have developed the following skills required for subtitling (after taking a course at this level of education) on a scale of 1-5 (1 = not at all; 2 = only slightly; 3 = moderately; 4 = to a great extent; 5 = to the greatest possible extent).

1 2 3 4 5

Spotting and working with timecodes

Working with a waveform, if applicable

Adjusting the reading speed and understanding its significance for the audience

Subtitling with templates and fixing them if necessary (and possible)

Reviewing colleagues' work and providing feedback

Converting video and subtitle file formats

Creating burnt-in subtitles (forced narratives), if applicable

Adjusting subtitles to shot changes, adding and removing them

Adaptation and reduction of dialogue in subtitles to fit the reading speed

Developing your general translation/subtitling (linguistic skills)

Q6. Indicate your satisfaction with each of the features on a scale of 1-5, if you have used them (1 = extremely dissatisfied; 2 = dissatisfied; 3 = neither satisfied nor dissatisfied; 4 = satisfied; 5 = extremely satisfied). Choose "No opinion" if you have not used the feature. If any drawbacks come to mind, feel free to mention them in the open-ended question.

1 2 3 4 5

Create Pro

Closed Captions

Translate Pro

Transcribe

Review Pro

Burn & Encode

Q7. Which feature did you use most often? If you used more than one fairly equally, you can indicate that under "Other".

- Create Pro
- Closed Captions
- Translate Pro
- Transcribe
- Review Pro
- Burn & Encode

Q8. Would you consider purchasing a license for OOONA in the future?

- Yes
- No
- Maybe

Q9. Have you ever used free desktop-based subtitling solutions?

- Yes
- No
- Other

Q10. If you have, which software do you prefer?

- Subtitle Workshop
- OOONA
- Any other cloud-based subtitling software
- Any other free desktop-based subtitling software
- It does not make a difference to me

Q11. Why?

Q12. Have you become more interested in the practice of subtitling upon finishing the course?

- Yes
- No
- Maybe

Q13. If you have any additional comments or observations not included in the previous segments, feel free to share them here.

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