



## **A NEW APPROACH FOR DISTANCE LANGUAGE LEARNING: COMPARING CURRENT PROGRAMS AND EFFECTIVENESS OF AUDIO EDITING PROGRAMS**

**Aysel Deregözü<sup>1i</sup>,  
Volkan Kanburoğlu<sup>2</sup>**

<sup>1</sup>Inonu University,  
Malatya, Turkey

<sup>2</sup>Marmara University,  
Istanbul, Turkey

### **Abstract:**

The main goal in language education is to develop learners' skills in oral communication that enables to interact in the target language. Yet, in times of the pandemic, activities supporting the development of communicative competences are difficult to implement, as these activities are arranged mostly for in – class settings with the need of students' interactive participation. Hence, language education needs to be adapted according to the new circumstances. The aim of this study is to examine how open source audio editing programs can support language education especially in promoting oral competences and implementing communicative activities for in – class language education with social distance and distanced language education. For this aim, open source audio editing programs are examined and compared in view of their features. Within this aim the programs Audacity, Ardour, Ecasound, Jokosher, MusE, Qtractor, Rosegarden, SoX, Sweep and Traverso DAW are examined. Furthermore, on the example of the program Audacity, some useful features for preparing audios in language education are presented. It is recommended to use these programs in language education.

**Keywords:** communicative competence, language education, distance learning, audio editing program, technology

### **1. Introduction**

Learning a language means to acquire skills, that enable their users to communicate in the target language. Yet, in language education the acquisition and the development of communicative skills is highly depending on students' active participation. Oral performances in language classes contribute to the development of communicative skills. However, multiple obstacles hinder students' engagement in language classes. Among

<sup>i</sup> Correspondence: email [aysel.deregozu@inonu.edu.tr](mailto:aysel.deregozu@inonu.edu.tr)

these obstacles performance anxiety is often reported as one of the most influential factors impediments to language learning (Swanson, 2014, p.67). *“Theoretically, as anxiety increases, learners may experience stress and a lack of self-efficacy, which tends to hinder second language acquisition. Conversely, as students begin to feel more comfortable in the learning environment, students demonstrate risk-taking behaviours when practicing and acquiring a new language”* (Krashen, 1981, cited by Swanson, 2014, p.67). Hence, reducing anxiety in language classes is a crucial point to ensure that learners get involved in classroom interactions and communicative performances are showed up. Within this context, it has to be clarified how anxiety can be reduced in language classes. Using educational technologies in language education may help to overcome these affective barriers.

## 2. Literature Review

Broadly defined *“(...) as the study and practice of facilitating learning and improving performance by creating, using and managing technological processes and resources.”* (Mishra, Koehler, & Kereluik, 2009, p.48) educational technology is regarded to have multifaceted functions especially in language education. It can be used as a tool to simulate real life situations and help students to have control over the learning process (O’Leary, 1998). Moreover, it enables learners to work on their own pace that makes a differentiated learning possible. Furthermore, *“(...) research suggests that the blending of technology and best practices in the teaching languages can foster a low-anxiety learning environment, improve student motivation, and foster innovative S/FL learning practices”* (Swanson, 2014, p.67). Thus, educational technologies that are implemented in language classes are supporting tools for learners to overcome affective barriers. In this context it has to be clarified which technologies or applications can be used for language classes that can reduce affective barriers and enhance oral communication.

But firstly, it has to be pointed on the fact that *“oral communication is a complex and multifaceted language process”* (Murphy, 1991, p.51) and communicative skills need to be practiced with appropriate supporting activities that involve learners in the learning process. In this regard supporting activities for the development of oral skills are categorized for beginner, intermediate and advanced levels. In this regard, completing information - gap activities, playing interactive games, introducing oneself/ others to the class, describing a personal experience, discussing content material/ issue in small groups and role – playing are regarded to be classroom activities that contributes to the improvement of fluency in oral communication especially at the beginner stages. Whereas solving problems, speaking to inform, summarizing topics, debating topical issues in class, enacting socio-dramas and delivering a report to the class are amongst activities for the intermediate and advanced level that supports fluency in oral communication (Murphy, 1991). When examining these activities for the development of oral skills, it can be inferred that they may challenge the learner in increasing their anxiety as oral performances are required to complete these activities. Furthermore, it can be inferred that in times like pandemic, where distance learning is compulsory, these

activities seem to be difficult to be implemented in language education as they need social proximity. Yet, there is a way to implement them in distance language education and that is to use technological appliances and software that enables to perform these activities.

Nevertheless, it has to be pointed on the fact that the implementation of technological appliances and software may both help learners to overcome the challenging situation in language classes as well as making possible to perform oral activities with the aim to develop students' communicative skills. Hence, bringing new technologies and foreign language education together not just in normal but also in extraordinary challenging times like pandemic, may be helpful to overcome obstacles hindering communicative activities to be performed.

As in language education, the development of communicative skills in the target language is the main goal; the use of audios may be contributory to its development. Researches examining the impact of using audios in language teaching on learners' learning success revealed that the use of audios has positive effects on learners' communicative skill development in many ways. Tecedor and Campos – Dintras (2019) examined how the implementation of voice recording and videoconferencing activities effected the development of oral communication in Spanish lower – level courses. The study results show evidence that voice-recording activities promote fluency, accuracy and complexity in interpersonal tasks and complexity and fluency in presentational tasks. Furthermore, Swanson and Nold (2011, p.23) emphasized that *“One method to approach the task of lowering student anxiety while increasing student involvement in the language learning process to measure students' oral proficiency is to offer students the opportunity to create out-of-class recordings in order to demonstrate their proficiency”* (Swanson & Nold, 2011, p.73). Hence, it can be concluded that using audios may support learning success in many ways. Furthermore, it has to be pointed on the fact that software may be implemented both for performing communicative activities in – class, securing the required social distance in times of pandemic as well as on distance learning platforms, where interactive performances are limited to the distance learning platform possibilities. In this regard, software for creating audios and audio-visual aids may be useful in creating a learning environment while respecting social distance without limiting interactivity.

Open source audio editing software with the open source license is among the software that can be used for creating audios and audio – visual aids. *“The open source license allows users the freedom to run the program for any purpose, to study and modify the program, and to freely redistribute copies of the original or modified program”* (Coppola & Neelley, 2004, p.2); hence, they are more advantageous compared to commercial software with limited access. Thus, GNU General Public licensed software is user-friendly and they can be used without any restrictions. Nevertheless, in educational context, as institutions have to pay for any licenses of commercial software to provide access to their teachers and learners, open source software guarantee fully access without any charges. Hence, from an economic viewpoint this software can be recommended for the usage in education. A further advantage of open source software is that they can be changed in any way. Thus, users can change and add specific features to the software. As the new

generation is growing up in a technology - rich environment, this software may appeal to their interests. Hence, with open source software students' skills development may be promoted under various aspects.

In the context of language education, open source audio editing software can be used for recording and editing of oral performances. However, teachers and learners need to know, which software they can use and what their features are. Furthermore, they need to know, which features are useful. Hence, it has to be clarified, what kind of open source audio editing software exist and what their key features and functions are.

In this regard research questions of this study are:

- 1) What kind of open source audio editing software are available and what are their key features?
- 2) How practical are they to use and which features can be recommended especially in language education?

### **3. Method**

In this study, the aim is to examine the features of open source audio editing programs for creating audios and audio-visual aids to work with in class and out of class and to identify their practicality and functionality in language education. With content analysis method open source audio editing programs which possess a GNU General Public license are explored. In this regard the software Audacity, Ardour, Ecasound, Jokosher, MusE, Qtractor, Rosegarden, SoX, Sweep and Traverso DAW are examined. The examination is made in view of key features, compatibility with operating systems, recording, export/import of files, supporting file formats, editing, effects, accessibility and special features. Furthermore, the software Audacity is examined closely, as it gives unlimited opportunities to its users and is also easy – to – use. On the example of Audacity some practical information on how to implement it in language education are given.

### **4. Results and Discussion**

#### **4.1. Results on Open Source Audio Editing Programs and their Key Features**

In Table 1 key features of the open source audio editing programs are presented.

**Table 1:** Open Source Audio Editing Programs and Their Key Features

Program	Features	Compatibility	Supported File Formats	Editing	Notes for Users
Audacity	Multiple recording and playback devices, mixing, post-processing, trimming, visualizing	Windows, macOS, Linux, and other Unix-like operating systems	WAV, AIFF, MP3, AAC, Ogg, FLAC	Unlimited levels of undo, editing, processing, splitting	Easy – to - use
Ardour	Flexible recording, unlimited multichannel tracks, non linear editing, soundtrack, mixing	FreeBSD, Linux, macOS, Microsoft Windows	WAV, Ogg, FLAC	Dragging, trimming, splitting, unlimited undo/redo	Non linear editing
Ecasound	Hard disk/ multitrack recording and mixing, effect processing, realtime signal routing	FreeBSD, Linux, macOS,	MIDI, AIFF, FLAC, VOC, MP3, WAVi CDR	Flexible interconnection of audio inputs, files, outputs, and effects	Sequencing small audio clips, sound synthesis, bitwise file conversions
Jokosher	Multi – track studio, Recording music and podcasts, recording, editing, mixing	Ubuntu, open SUSE, Microsoft Windows	WAV, MP3, Ogg	Splitting, trimming, editing	Simple
MusE	Audio and MIDI sequencer, with editing and recording abilities.	Linux	MIDI, audio files	Editing, Sequencing	Built with Qt5 toolkit
Qtractor	Multi-tracker sequencer application Multi – track audio and MIDI sequencing	Linux	MIDI, WAV, MP3, Ogg, AIFF, FLAC	Sequencing and recording	Needs Linux
Rosegarden	Music composition, MIDI sequencer, basic support for digital audio	BSD, Linux	MIDI	Recording, mixing, editing, Using effects	Easy-to - learn

SoX	Recording and playing audio	Microsoft Windows, Linux, OS X	WAV, Ogg, AIFF, FLAC	A range of effects, editing, mixing	Command – line audio editing, not graphical
Sweep	Digital audio editor	Unix- like operating systems	WAV, MP3, Ogg, AIFF, FLAC	Cut, copy, paste, flexible recording, visualisation	Powerful editing, easy – to –use
Traverso DAW	Multitrack audio recording, editing	Microsoft Windows, MacOS, Linux	WAV, MP3, Ogg, FLAC	Recording, editing	Easy to master user interface

(Sources: [www.audacityteam.org](http://www.audacityteam.org), [www.ardour.org](http://www.ardour.org), <https://ecasound.seul.org/ecasound/>, <https://launchpad.net/jokosher>, <https://muse-sequencer.github.io>, <http://rosegardenmusic.com>, <http://sox.sourceforge.net/>, <http://metadecks.org/software/sweep>, <http://traversodaw.org/>)

When the open source audio editing programs are examined (Table 1), than it is evident that all of them are developed to record and play audios, but each of them have special features. Just five programs are compatible with Microsoft Windows and five with MacOS. Audacity is an easy – to – use and Rosegarden easy – to – learn program. Whereas Audacity is suitable more for audio recording and editing, Rosegarden is more for music compositions. Jokosher is quite simple program and SoX is a command – line audio editing program without a graphical audio interface. Hence, the examined open source audio editing programs give their users various possibilities to create audios.

As it is an easy – to – use program containing all basic features, some practical information on audio recordings are given with the program Audacity.

#### **4.2. Results on the Functionality and Practicality of Open Source Audio Editing Programs in Language Education: Explained On the Program Audacity**

As mentioned before, Audacity is an audio editing program that allows recording and editing audios. Especially with this program, speed of spoken language and sound quality can be changed and adapted. With this way, not just learners but also teachers have the chance to prepare audios with high quality. The program also allows changing the sound/ voice, to erase distracting sounds coming from background, which are disturbing the recording and to slow down/ increase the speed of spoken language. Furthermore, with the aim to increase the quality of the audio recording, with equalizer the intonation and pronunciation can be changed. This function may help to increase learners' self – confidence, as to try to speak in a different language as the mother tongue is challenging them because of the different language sound system. By using this function, they have the chance to correct pronunciation errors. Also, the frequency of the sound can be regulated with it. Furthermore, the tone of the voice can be changed and background sounds can be added. With mixing, post-processing, trimming and visualizing the audios can be processed. The feature unlimited levels of undo, give users the opportunity to change the recordings without the fear to lost prior versions. With the abovementioned functions not just students but also language teachers can prepare audio materials suiting their needs.

#### 4.2.1. Recording with Audacity

For any recording with the program an internal or external microphone is needed. For the first time recording, the red button for recording needs to be clicked. By clicking on the red button, sound waves appear on the screen. By clicking on the 'stop' button the recording is stopped/ finished. With 'Play' or 'Pause' the audio recording can be played or paused (Figure 1). This feature is especially useful when students are recording audios for speaking tasks or activities as it gives the chance to stop the recording. Thus, the students find time to think on how to continue may it be linguistically or task related. This function can help learners to create audios while considering accuracy and fluency. Parts of the audio recording can be changed, by selecting the parts on the sound waves and cutting them with 'Ctrl + X' and pasting new parts with 'Ctrl + V'. With this function, errors in the sentences can be cut out and with pasting new parts, the incorrect part can be filled out with correct ones. With this function incorrect parts of a sentence or wrong used vocabulary can be deleted and changed. Moreover, in sentences gaps between words can be shortened or extended according to preference or sentence structure needs.

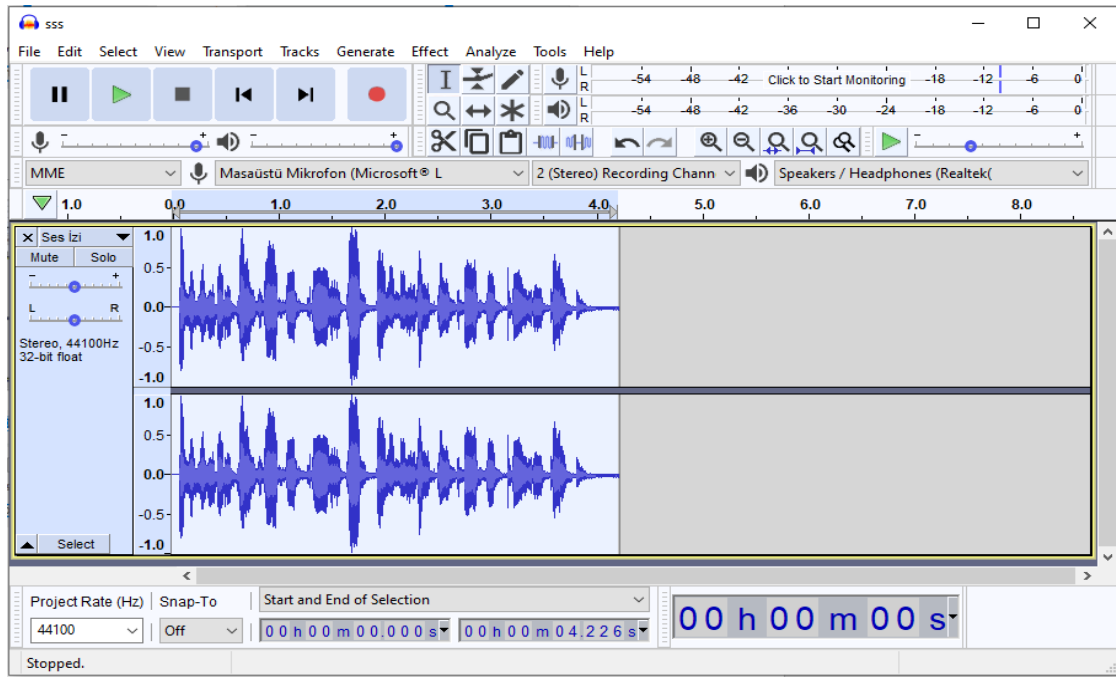


Figure 1: Recording with Audacity

#### 4.2.2. Amplification of Sound Waves

Another useful function of the program is that the sound waves can be amplified. That means, when the sound wave is not on an appropriate level such as too high or too low, the peak amplitude can be increased or decreased. The peak amplitude can be adjusted by selecting the sound wave with 'Ctrl + A', clicking on 'Amplify' in the "Effect" menu, changing the level of amplitude by entering a new decibel value and clicking on 'OK' (Figure 2). By this way the amplitude of the voice recording can be regulated. This function allows also that audios produced by using mobile phone recording or

microphone and which are under the desired amplitude level, with other words too low or too high, can be normalized. That means, that for in – class or online use, the sound level of the audios can be changed, when for instance the voice level of audios recorded by students are too low. In language learning and teaching, it is important that in oral communication the sender is sending a message, which meaning can be decoded by the receiver correctly. When the oral message is sent under a sound level, where the receiver may have difficulties in understanding it, than the communication may not occur in the desired way. For instance, when teachers voice in audio recordings are too low, because of natural reasons or in audios, where recordings are under a normal level, the sound level can be adjusted. Especially, in language learning at the beginner stages, where learners may have much more difficulties in grasping the meaning of sentences or words in the new language, the increase of sound level, may help for their understanding.

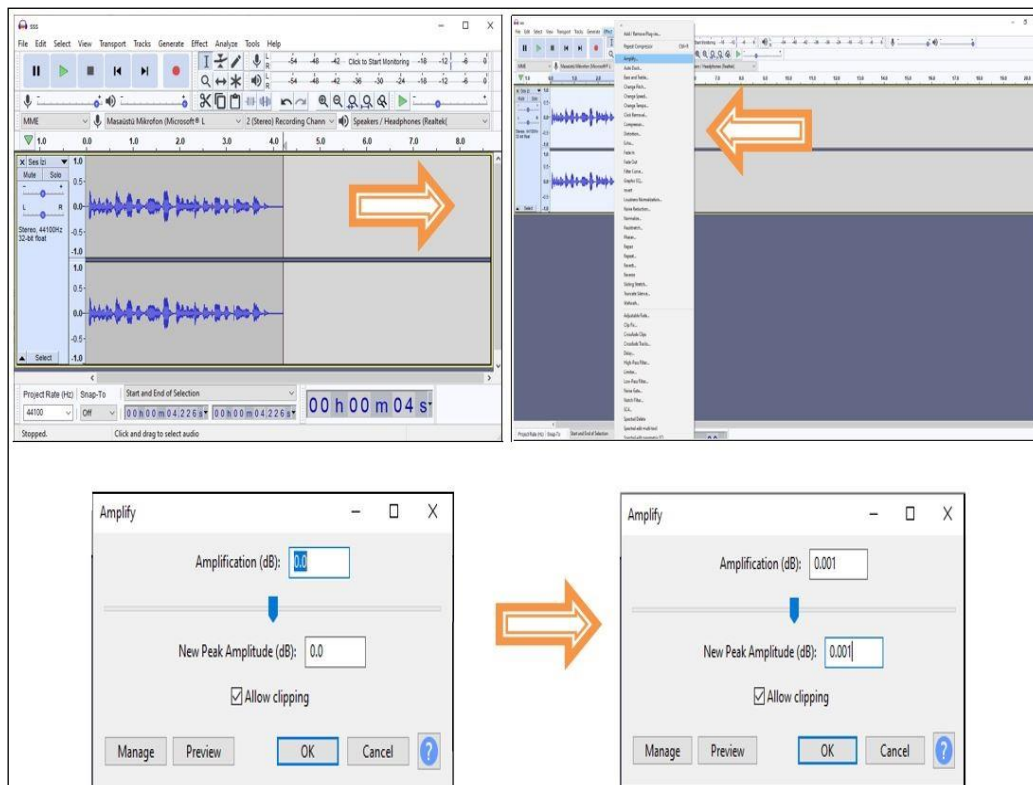


Figure 2: Amplification in Audacity

#### 4.2.3. Reducing Noise

A further function of the program is that while recording audios undesired sounds from background or low quality microphone equipment might lead to unwanted sounds and disturbers in the audio recordings. In such cases the program allows to select the parts where the noises are and to reduce them. To reduce noises, the parts where the noises are, need to be selected and on the menu 'Effect' the option 'Noise reduction' needs to be selected, by clicking on 'Get noise profile' 'Reduce noise' and 'OK', noises can be reduced (Figure 3). By using this function, audios recorded from low quality microphones can be



converted to high quality audios. Hence, with this function audio materials with high sound quality can be prepared for language teaching.

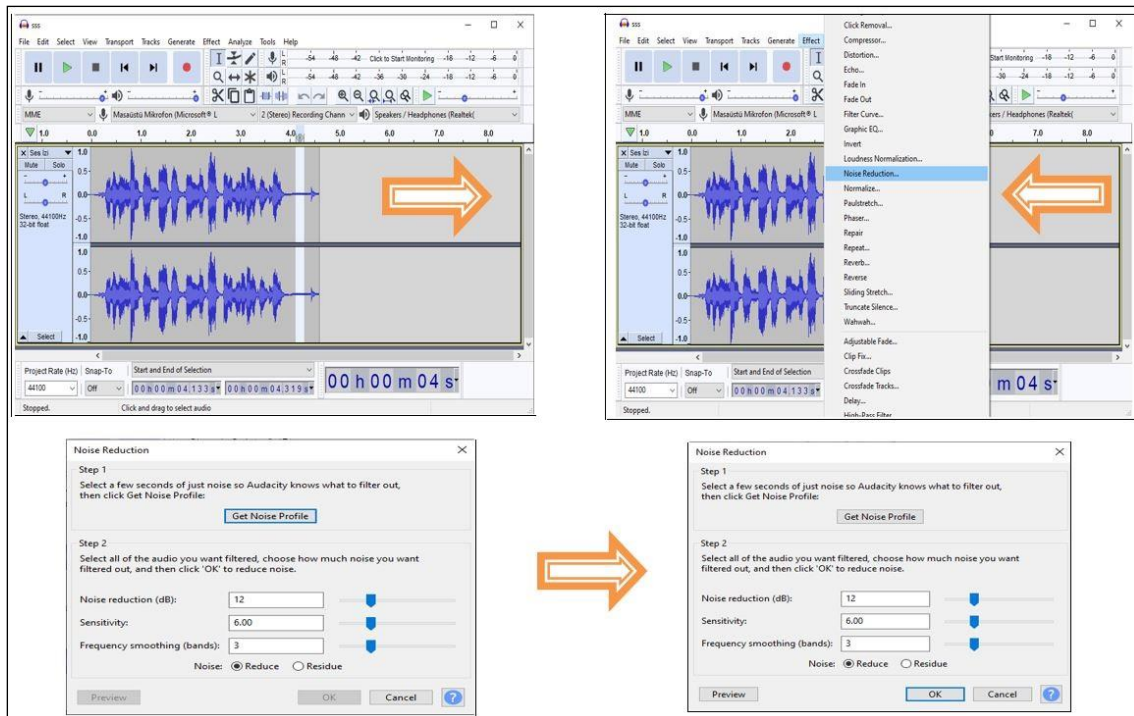


Figure 3: Reducing noise in Audacity

#### 4.2.4. Changing Tempo

In language learning another challenge for learners is that the speed of spoken language might be too high to understand the words and to grasp the meaning of sentences or utterances. Moreover, for the correct perception of pronunciation, the speed of utterance is important. Therefore, in language teaching especially at the beginner stages, it can be recommended to adapt the speed according to learners' need.

With Audacity, without effecting sound quality the tempo can be regulated. For the regulation the whole part of the recording needs to be selected with 'Ctrl + A' and by clicking on the option 'Change Tempo' on the 'Effect' menu a window with a scroll bar opens. By moving the scroll bar to (-) or (+) the tempo can be decreased or increased. Also with 'Change Tempo without Changing Pitch' a percentage change between -30 and +30 can be added and without effecting sound quality the tempo can be regulated (Figure 4).

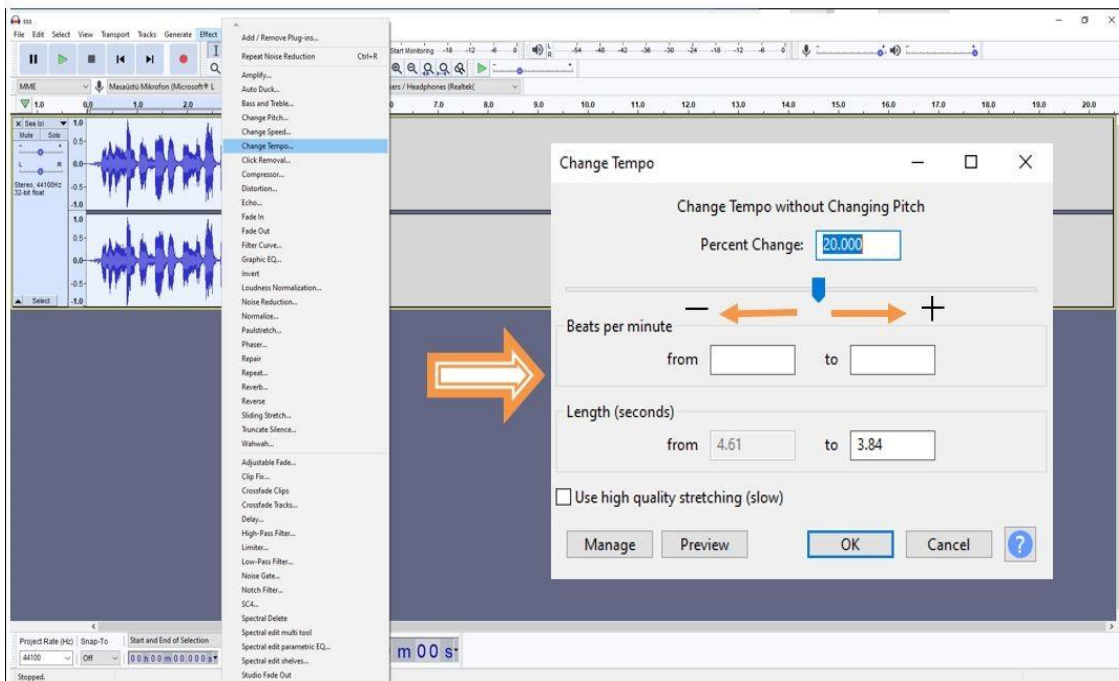


Figure 4: Changing tempo in Audacity

Audacity offers much more opportunities to their users, but the abovementioned functions are especially exemplified for the usage in language education.

## 5. Conclusions and Recommendations

In this study, the aim was to examine the features of open source audio editing programs and implementation possibilities in language education. The examination regarding open source audio editing programs, which possess a GNU General Public licence revealed that there is a range of open source audio editing programs available without any restrictions. Yet, not all programs are suitable for the usage in language education, as for example some of them are not compatible with widely used operating systems. Furthermore, not all programs are easy – to – use or learn. But, as in this study it is shown on the example of Audacity, teachers and students may understand basic functions easily. Furthermore, on the example Audacity basic functions are examined and it can be concluded that Audacity offers various possibilities to create audio materials while respecting students' linguistic needs. Furthermore, created once they can be shared on educational platforms like the EBA education platform, which is created by the Turkish National Education Ministry and is used national wide by teachers and students.

Thus, it can be recommended to use open source audio editing programs to create audio materials, which can be used in language education and to encourage students to prepare their own audios. It is furthermore recommended, to prepare interactive and communicative activities by using audio recordings. As the program allows to prepare audios where parts of recordings can be inserted and cut out on a creative way, also pair or group work might be implemented with respecting social distance and without the

need of proximity. Hence, by using open source audio editing programs creative activities can be prepared for distanced language education, with the aim to develop students' communicative competences in times where social distancing is literally a matter of life and death.

### **Conflict of Interest Statement**

The authors declare no conflicts of interests.

### **About the Author(s)**

**Aysel Deregözü** is currently teaching at Inonu University in Turkey. She graduated from Istanbul University, Faculty of Education, German Language Teaching and English Language Teaching Department. She received her M.A. in Istanbul University German Language Teaching Department. She received her PhD degree in German Language Teaching from Marmara University. German and English language teaching methods, language teacher education, linguistics are among her fields of interest.

**Volkan Kanburoğlu** is currently teaching at the Faculty of Education, Primary Education Department at Marmara University in Turkey. He received his PhD degree from Marmara University. Educational technologies, computer science education, primary education are among his field of interest.

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